VOLUME XXII NUMBER ONE

THE NATIONAL GEOGRAPHIC MAGAZINE

JANUARY, 1911

CONTENTS

Wild Man and Wild Beast in Africa — THEODORE ROOSEVELT
With 42 Illustrations

The Population of the United States — HENRY GANNETT
Illustrated with 12 Diagrams

Women of All Nations
With 12 Illustrations

Damascus, the Pearl of the Desert — A. FORDER
With 20 Illustrations

Surveying in the Philippines — P. A. WELKER
Illustrated

Dumboy, the National Dish of Liberia — G. N. COLLINS
With 5 Illustrations

Notes on Oman — Rev. S. M. ZWEMER
With 10 Illustrations

Protecting Our National Forests from Fire — JAMES WILSON
With 5 Illustrations

Preparing Some of Mr. Roosevelt's South African Specimens
Illustrated

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THE UNIVERSITY OF CAMBRIDGE
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THIRD ANNOUNCEMENT

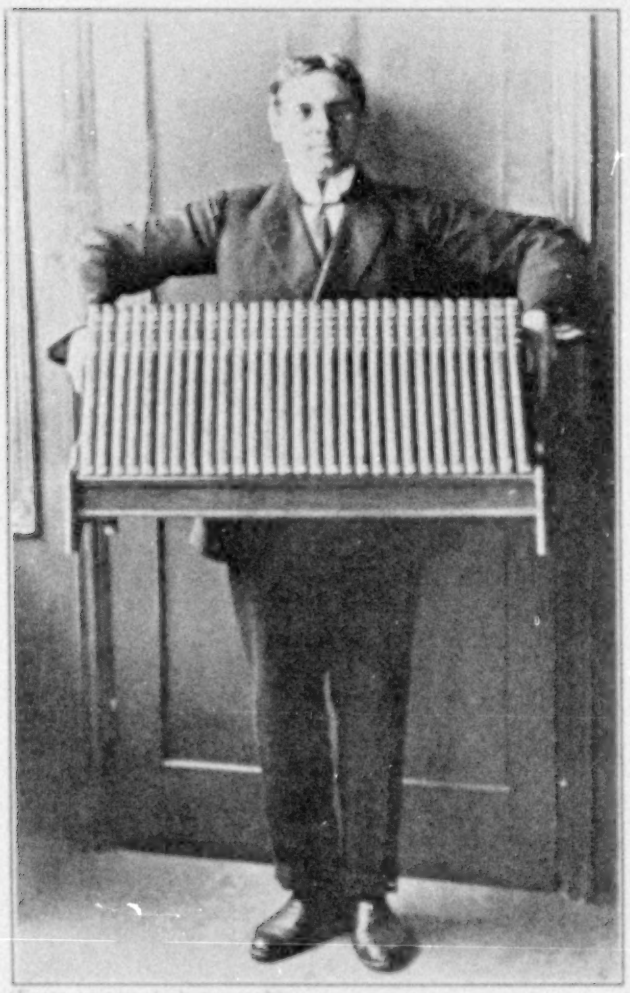
in regard to the NEW
11th EDITION of the

Encyclopædia Britannica

¶ As is generally known, the Encyclopædia Britannica was first published when this country was a British colony—that is, in 1768–71.

¶ ***The novel and convenient plan*** upon which it was built—the whole body of human knowledge being arranged under alphabetical headings—appealed immediately to the public, and the work has since occupied a position of supremacy among books of reference from which it has never been displaced. The Encyclopædia Britannica has, indeed, been the pattern and the basis upon which all other encyclopædias—in German and French as well as in English—have been edited.

¶ ***The last edition*** which was completely new was the Ninth, published by A.&C.Black (Edinburgh and London) between 1875 and 1889.



(From an actual photograph)
India paper edition of the new Encyclopædia Britannica in the portable oak trough —width of books 28 inches.

¶ ***The University of Cambridge*** is now about to bring out the New (Eleventh) Edition of the Encyclopædia Britannica in 28 volumes and Index, being an absolutely new and authoritative survey of universal knowledge as it stands in 1910.

¶ ***The entire work*** has been edited as a complete whole and not volume by volume as in the past, and part of the first impression, which is now in the press, is being printed on India paper (very light and opaque), greatly reducing the bulk and weight of the books, making them easy to handle and, therefore, easier to read than in the case of any previous edition.

¶ ***The sum of £230,000 ($1,150,000)*** has been expended on the New (Eleventh) Edition, this being the sum paid to editors and contributors, as well as for plates, illustrations, maps, type-setting, corrections, etc., before a copy was offered for sale. For the Ninth Edition less than half of this sum was similarly expended.

(See next three pages.)

The ENCYCLOPAEDIA BRITANNICA (11th Edition)

¶ *Of the Ninth Edition* there were sold in Great Britain and the British colonies 82,000 sets in its genuine or authorized form, and in this country 50,000 sets, besides over 300,000 sets of a mutilated and incomplete American reprint. All of these are now out of date and will be superseded by the New (Eleventh) Edition.

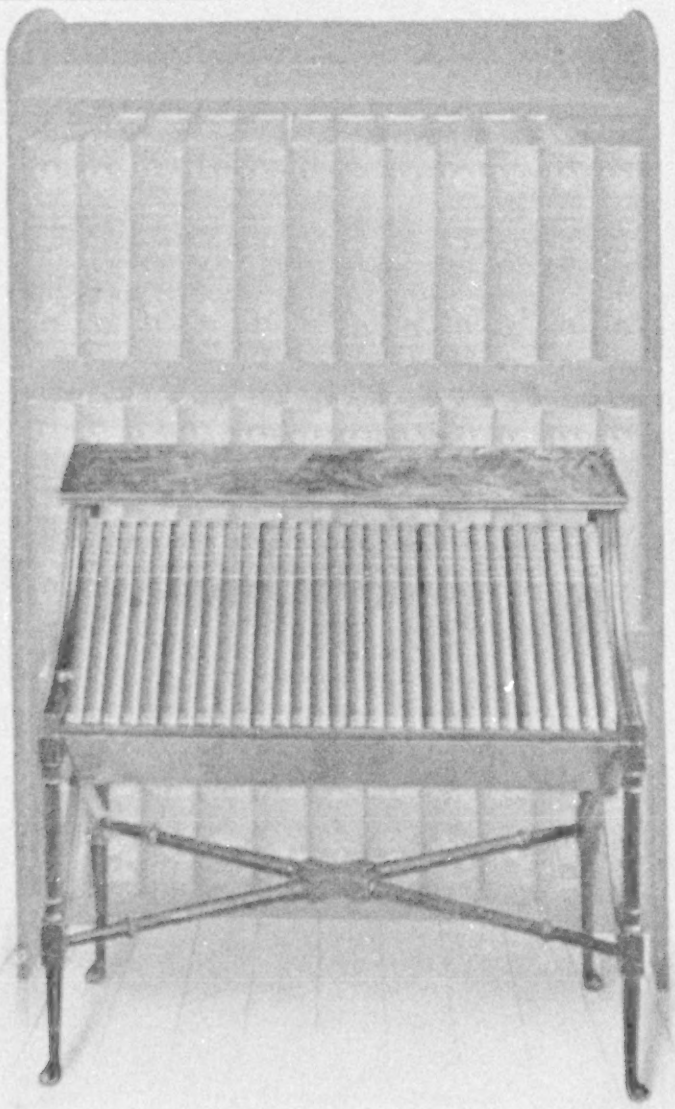
¶ In view of the fact that no completely new edition of the Encyclopædia Britannica has been issued for more than 20 years, it is anticipated that the demand for the New (Eleventh) Edition will far exceed that for the Ninth, and also that the demand will be immediate.

¶ *The printing and binding* of so large a work (29 volumes, 27,000 pages, 40,000,000 words) at one time will be without precedent in publishing, and the publishers are at the moment unable to tell to what extent the public will prefer the volumes printed on India paper, as it involves a complete revolution in the usual format of large works of reference.

¶ *It was, therefore, decided that at first it would be inadvisable to print more than a small number of copies (these being now almost completed) and that before concluding manufacturing contracts for a large edition a preliminary offer of the work at a low price should be made before publication and without any payments by subscribers, in order to ascertain in which form the public will prefer to subscribe—whether for the India paper impression (each volume to be less than an inch in thickness) or for the ordinary paper impression (the volumes to be 2¾ inches in thickness), and for which of the six styles of bindings.*

¶ It is necessary to obtain this information in order to place manufacturing orders for printing, paper, and binding materials on a large scale, with a view to saving at least 20 per cent. of the cost of production.

¶ *The decision to print a small first edition* was based on essentially practical grounds. Any business man who considers the matter will readily understand how important it is that it should be known in advance whether the majority of subscribers will order the volumes on India or on ordinary paper.* The employment of this kind of paper for a work of 28 volumes and Index is a radical departure in publishing. The offer of the New (Eleventh) Edition of the Encyclopædia Britannica is world-wide and 500,000 book buyers

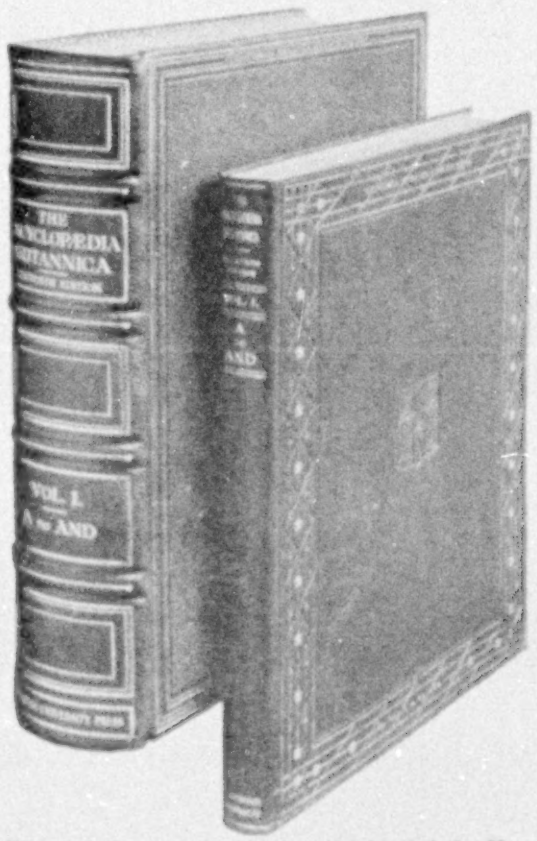


Reduced photograph to show the comparative size of the volumes of the Old Edition and of the New (11th) Edition on India paper, in the single-tier mahogany bookstand.

* Out of the first 1000 orders received in England, where the advance offer was made somewhat earlier than in the United States, 925 were for the India paper edition.

AN ENORMOUS BOOK IN A HANDY FORMAT

have been notified. Should only 100,000 sets be printed on India paper there would be required over six million pounds of this paper. If this estimate of the demand were too high by 10 per cent. it would mean that 600,000 pounds of paper would be wasted. The supply of India paper is limited; it costs in the London market a shilling, or 25 cents, a pound. It will be apparent that all possibility of selling the Encyclopædia Britannica Eleventh Edition at a profit would be swept away unless the preliminary estimates were correct. The manufacturing problem is more difficult in the case of the binding, because the purchase of leather runs into even more money.

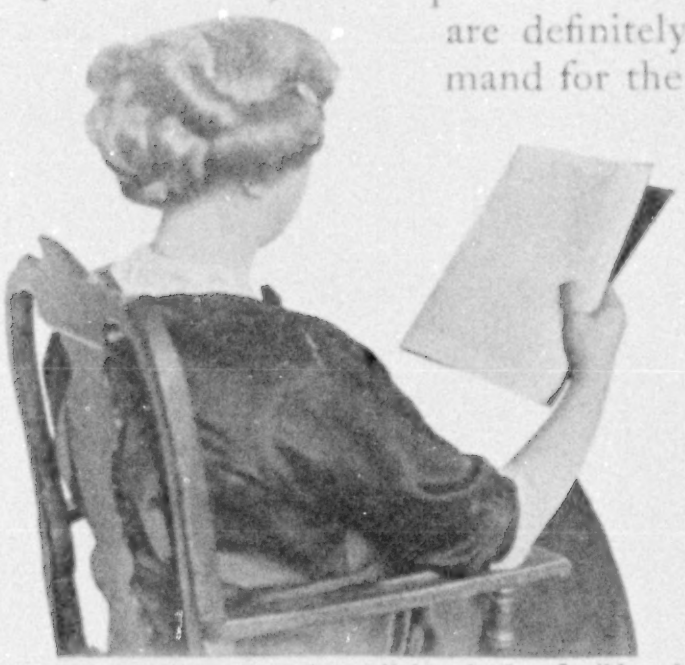


The Old Format (2⅝ inches thick) and the New (less than an inch thick) on India paper.

¶ If the Eleventh Edition of the Encyclopædia Britannica is to be sold at a reasonable price, it must be manufactured at low cost—that is, in large editions. If it is to be manufactured at low cost, it must be known approximately in what proportions the public will call for each kind of paper and each style of binding. These percentages can only be ascertained by an offer in advance of publication, and this is the purpose of the present announcement.

¶ ***A comparatively few sets for the United States and an equal number for Great Britain are now being printed, most of which are on India paper. When this announcement went to the printer the response of the public had already begun, and the indications were that the advance subscriptions would account for all the sets now being printed and many more.***

¶ Whenever, in the opinion of the Cambridge University Press, the percentages are definitely enough ascertained to determine the demand for the work in its two forms and six styles of bindings, the prices will be advanced—*without notice if necessary*. It will be necessary, very soon, to place applicants on a waiting list, delivery of the volumes to be made as soon as the paper can be produced and the volumes printed and bound, but each subscriber's name will be registered and each set delivered according to the date of application as indicated by the postmark. From this rule there will be no departure.


The use of India paper makes a light, slender, flexible volume, which may be doubled back, held in one hand, and read with ease and comfort, as this photograph shows.

¶ ***The Encyclopaedia Britannica, Eleventh Edition, is now offered direct to the public and not through book-agents or canvassers.***

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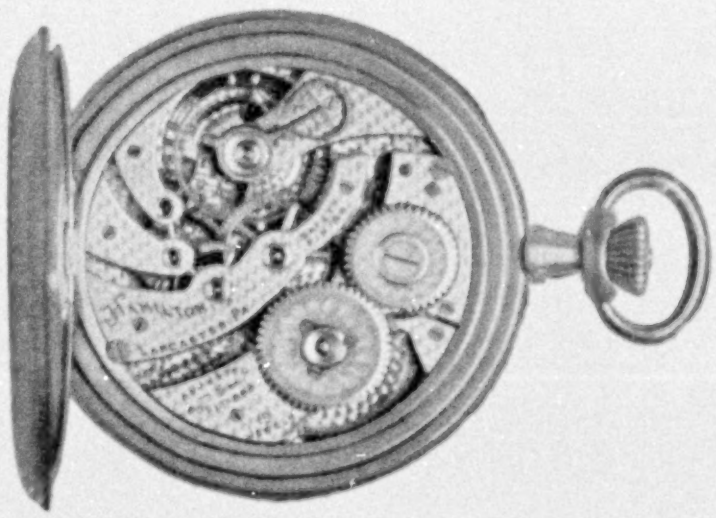

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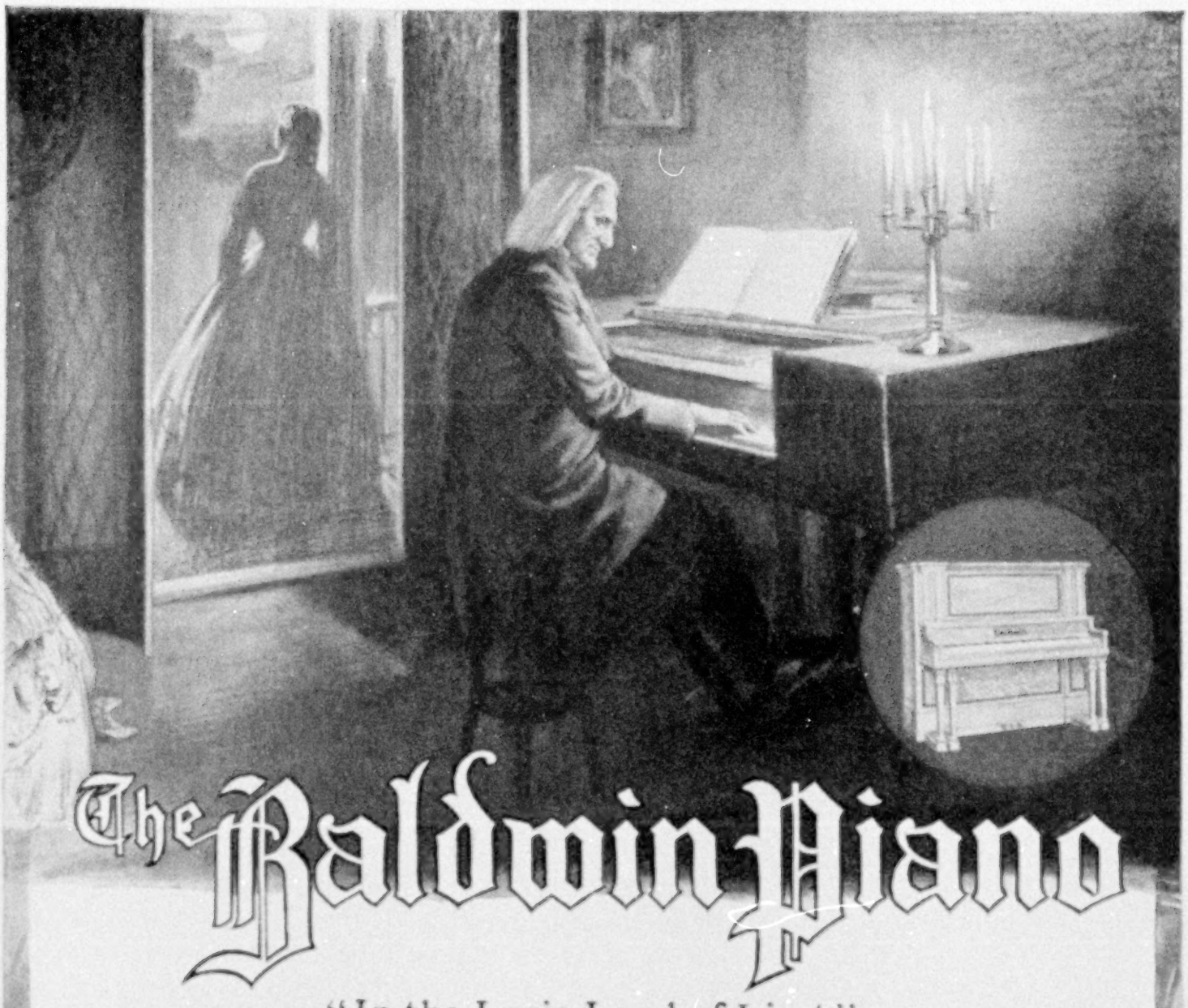

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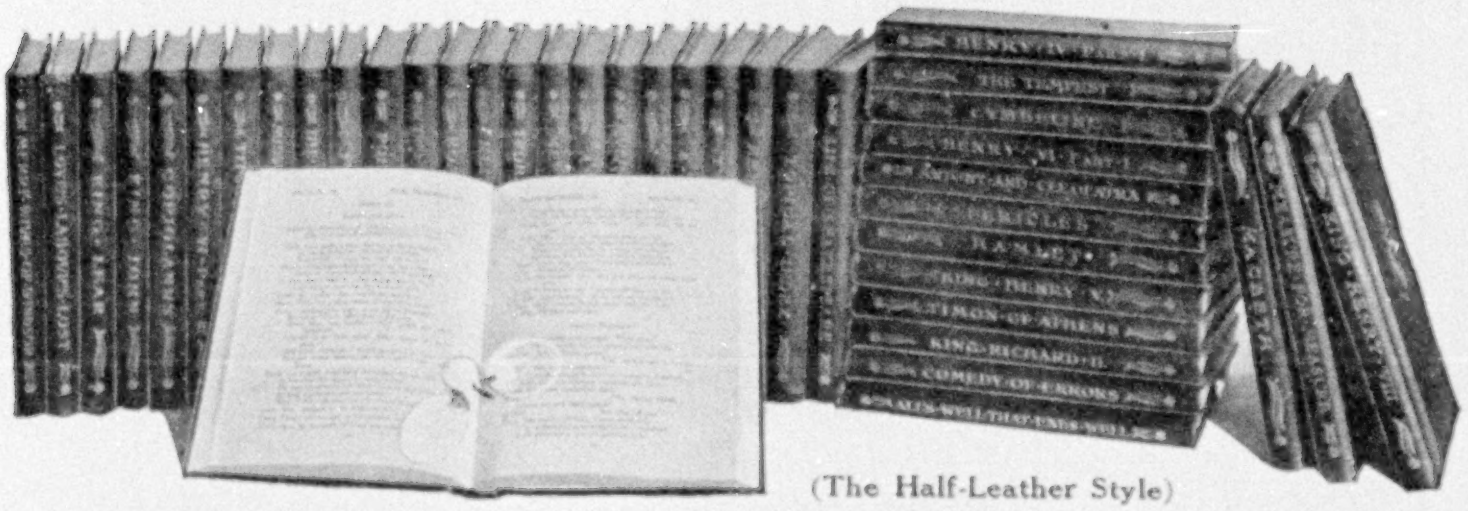

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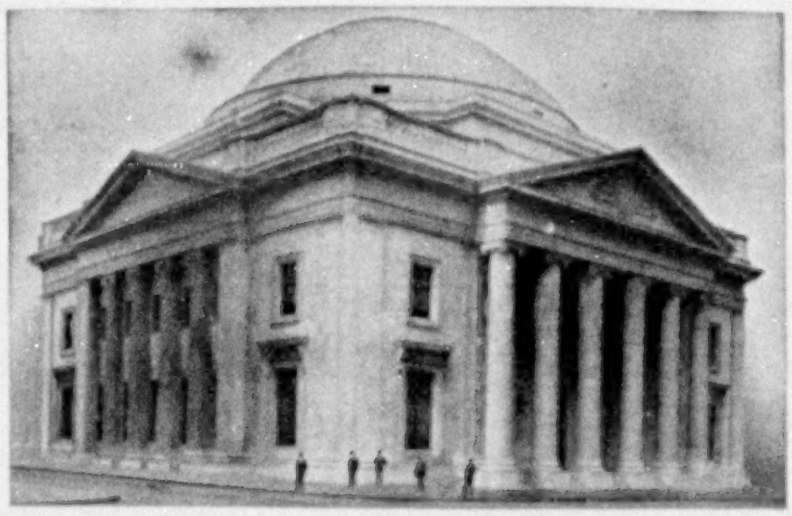

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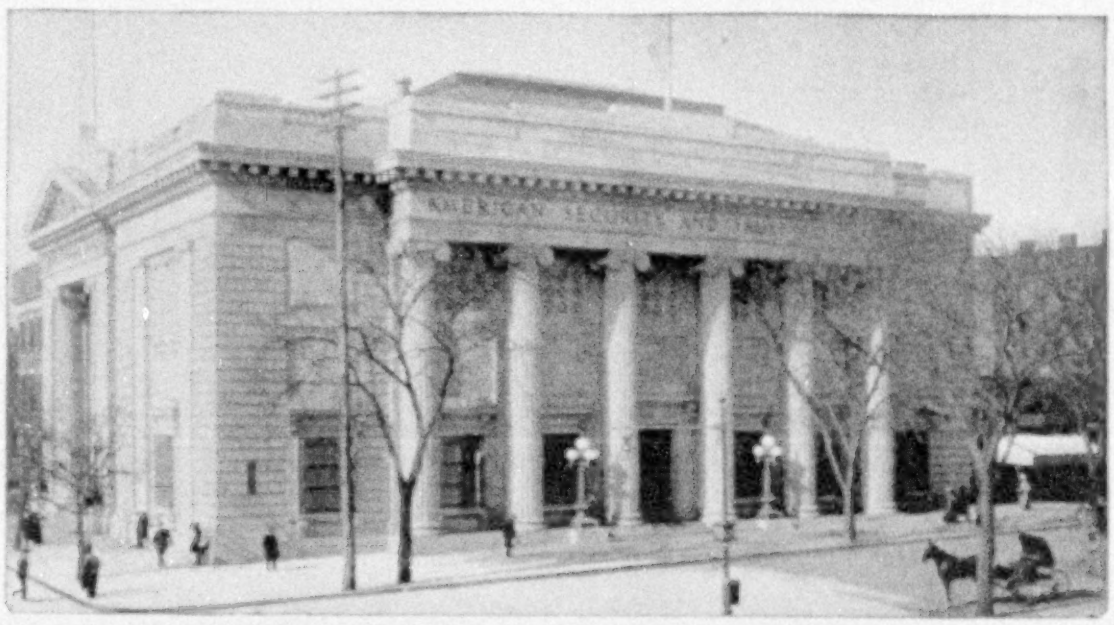

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VOL. XXII, NO. 1 WASHINGTON JANUARY, 1911

THE NATIONAL GEOGRAPHIC MAGAZINE

WILD MAN AND WILD BEAST IN AFRICA

BY THEODORE ROOSEVELT

HONORARY MEMBER OF THE NATIONAL GEOGRAPHIC SOCIETY

The following article is the address delivered before the National Geographic Society by ex-President Roosevelt, November 18. In presenting Mr. Roosevelt, President Gannett read the following resolution, which had been unanimously adopted by the Board of Managers of the National Geographic Society:

"RESOLVED, That the National Geographic Society through its Board of Managers herewith tenders to Theodore Roosevelt its hearty appreciation of his services to geographic science, both for his own work in that field as illustrated by his books, 'The Winning of the West' and 'African Game Trails,' and by the results of his expedition to tropical Africa, which brought back unparalleled zoological collections, and for his interest in the furtherance of original geographic works during his administration as President of the United States. Among these may be mentioned his success in obtaining an equitable decision relative to the Alaskan boundary; the aid he extended to Peary, which resulted in his discovery of the North Pole; his work for the Panama Canal; his interest in the irrigation of our arid lands and in the right using of our forests; the preservation of birds by the establishment of bird reservations; the measures taken by him to protect our natural wonders by reserving them as national monuments, and his active assistance in other problems in which the student of geographic history is most deeply concerned.

"For all these things the National Geographic Society holds Theodore Roosevelt in the highest honor."

IT is a very real pleasure to be here this evening, and no pressure was necessary to get me to come. I had always wished to have the chance of speaking first under the auspices of this Society when I came back from the other side to give an account of my stewardship. Before speaking about my trip itself, I want to say a word or two as to the circumstances under which I took it. I have always felt a little bit as if I was entitled to praise from the National Geographic Society only because I was interested in other branches of science, for I never really did anything for geography at all. But I have been so much interested in sciences connected with geography—in sciences which can be studied in company with those actively interested in geographic

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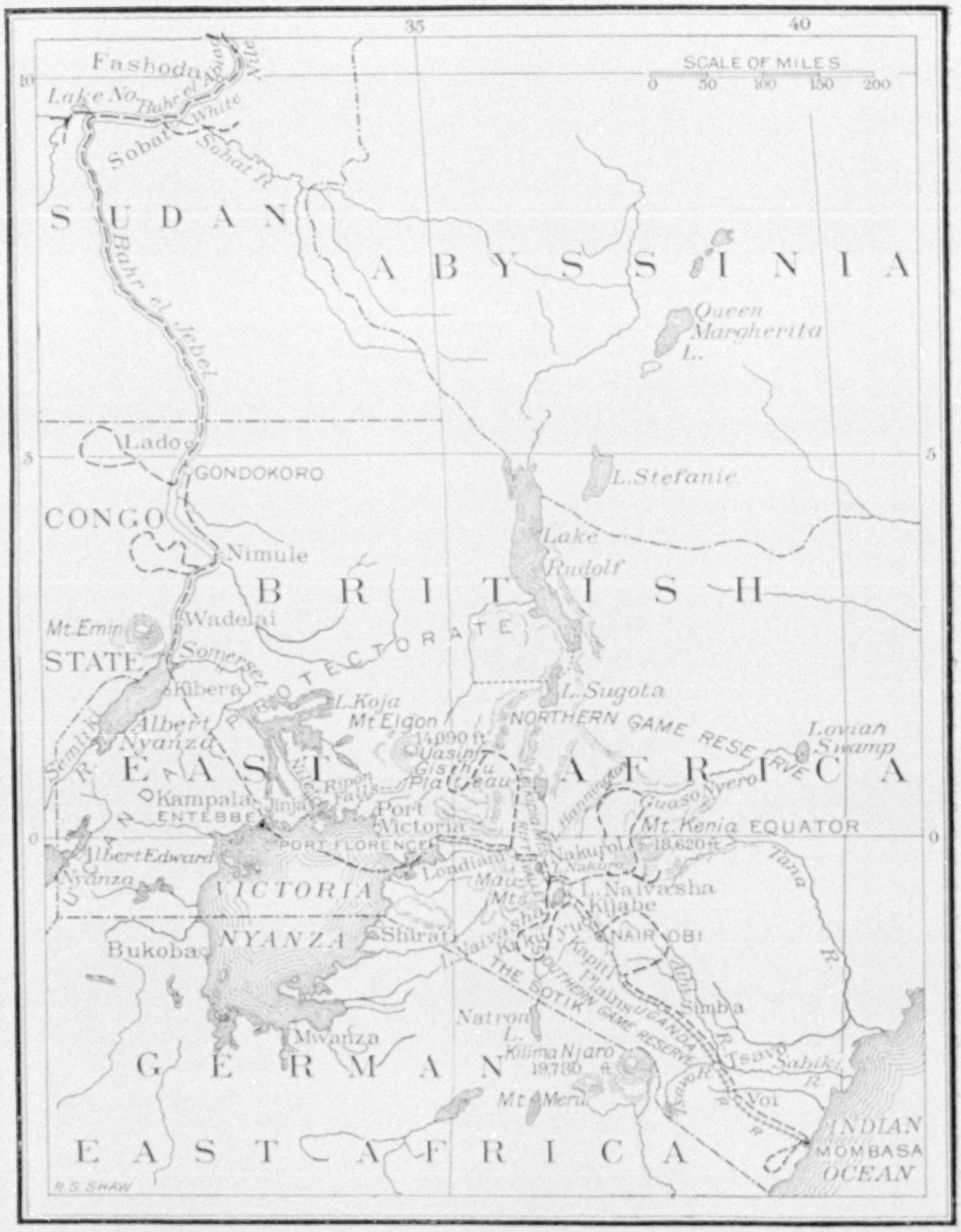

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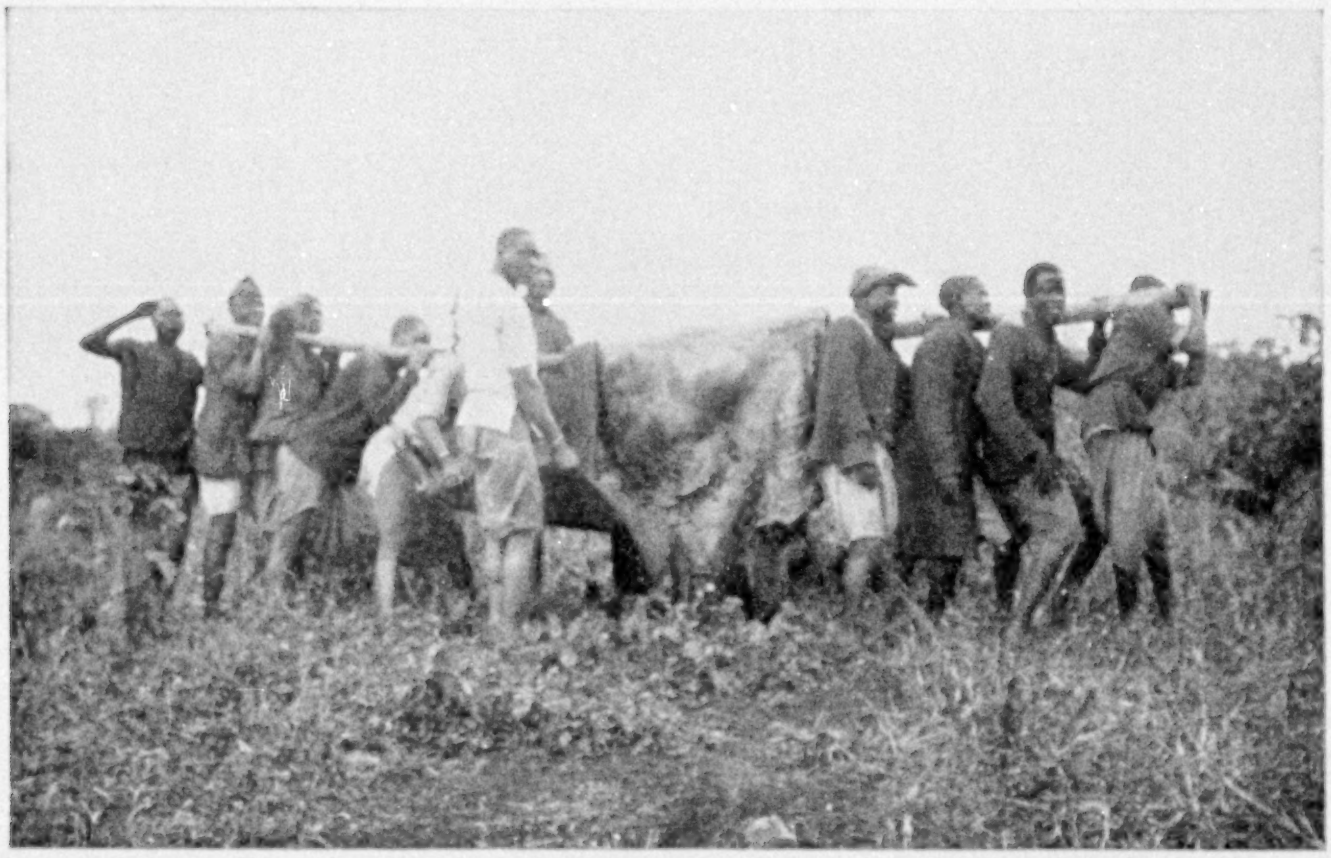
MAP SHOWING MR. ROOSEVELT'S ROUTE AND HUNTING TRIPS IN AFRICA

This map and the following illustrations, published by special permission of Charles Scribner's Sons, are from "African Game Trails: An Account of the African Wanderings of an American Hunter-Naturalist," by Theodore Roosevelt, and from other photographs by members of the expedition.



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CARRYING HEAD SKIN OF MERU BULL ELEPHANT TO CAMP

It required 20 men to carry each elephant's skull

science—that I have had the keenest possible interest in what has been done by this Society.

My going to Africa as the head of a scientific expedition was first suggested to me by Dr. C. Hart Merriam. I then got into communication with one or two gentlemen connected with the scientific work here in Washington, and they communicated with the Secretary of the Smithsonian, Mr. Walcott, who was then away from Washington. He instantly wired me his cordial approval of the suggestion, and said he hoped that I would make the trip for the Smithsonian Institution, and it was under Mr. Walcott, with Mr. Walcott as my superior officer, that I made my trip in Africa.

The success of the trip from a scientific standpoint depended upon the character of the scientific men we had with us. It would be quite impossible to overstate the value of the services rendered by Dr. Mearns, Mr. Heller, and Mr. Loring. I doubt whether three men better equipped for their work and more zealous in doing their work ever went on such an expedition, and the labor fell entirely on them. Really, I would be ashamed of myself sometimes, for I felt as if I had all the fun, I would kill the rhinoceros or whatever it was, and then they would go out and do the solid, hard work of preparing it. They would spend a day or two preserving the specimen, while I would go and get something else. At times I felt that it was a most unequal division of labor—that I was having the enjoyment, while the work of bringing practical results was being done by them, and it was being done by them not merely faithfully, but as a labor of love. They did it so well because they would rather have done it than to have done anything else at all; they would rather have had that opportunity than to have had any other opportunity that the world that year gave, and naturally there was a

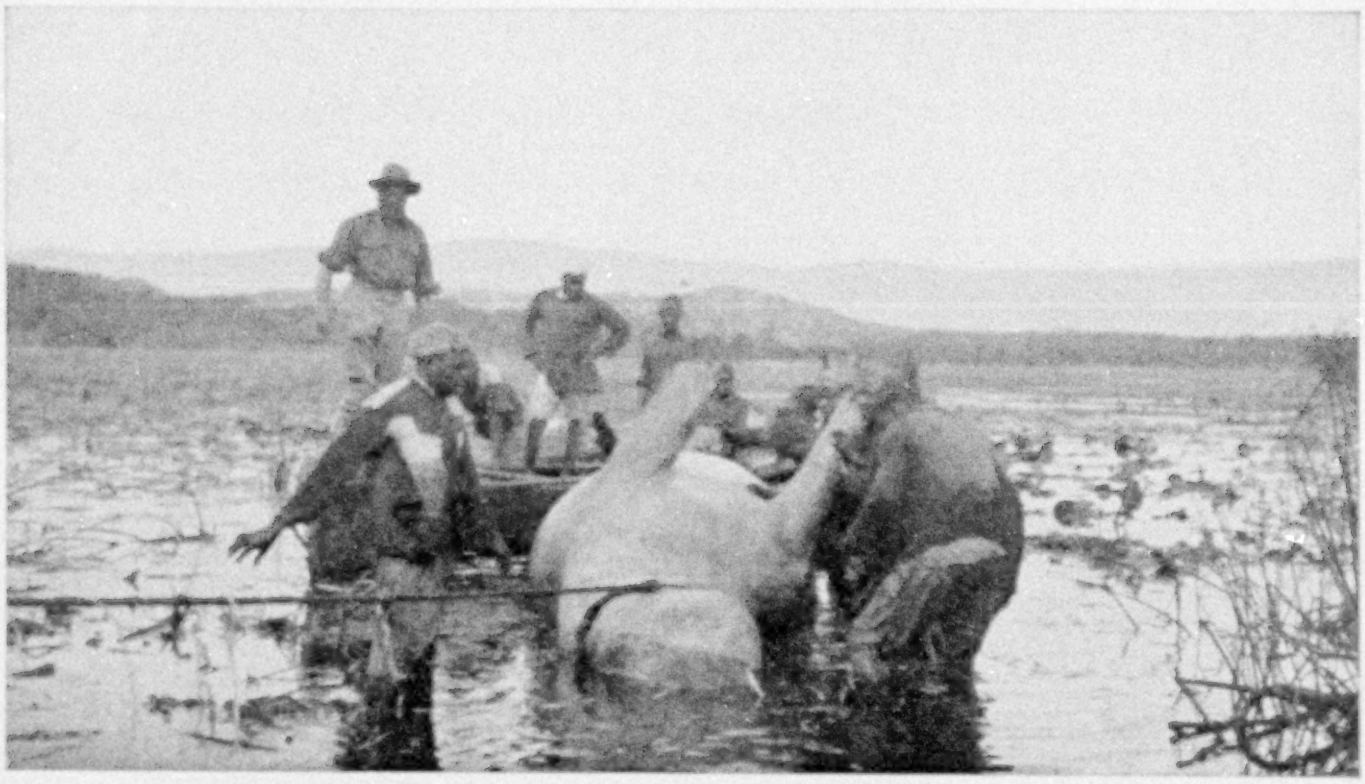


Photo by J. Alden Loring. Copyright by Charles Scribner's Sons

TOWING BULL HIPPO ASHORE: LAKE NAVAISHA

particular pleasure in working with men who approached their work in such a spirit.

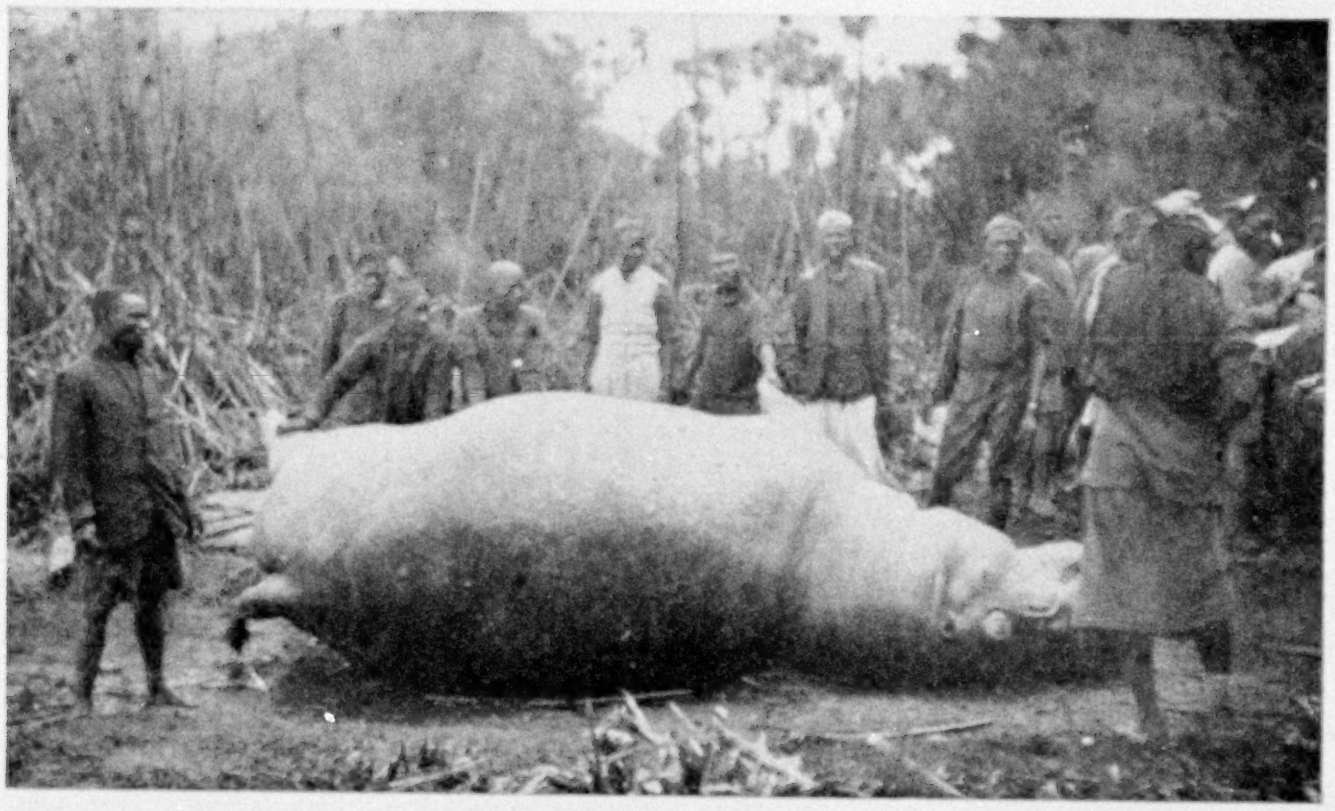
I should also, in fairness, mention another member of the Roosevelt family, my son Kermit, who did some excellent photographic work. Indeed, all the members of the expedition except myself did good photographic work. Among the photographs we brought back there were the best photographs of wild elephants that have ever been taken, and the only photographs of living white rhinoceros that have ever been taken.*

Messrs. Newland and Tarlton, of Nairobi, fitted out the expedition, and did this work excellently, and no better guides and managers for such an expedition could have been found in all Africa than Messrs. Cuninghame and Tarlton, the former of whom was with us throughout the trip, and the latter while we were in East Africa.

* Several of Mr. Kermit Roosevelt's photographs of wild elephant and white rhino were published in the November number of this Magazine, through the courtesy of Charles Scribner's Sons.

I, of course, felt that I was bound to make a success of the trip, because in a certain sense my companions and myself were representing the United States. I think I can say that no other expedition of the kind has ever come back from Africa or Asia with a better collection of specimens than we brought back, the collection being especially good in the large game animals. The series of skins, and in many cases of skeletons, of the square-mouthed rhinoceros, reticulated giraffe, giant eland, bongo, northern sable antelope, white-withered lechwe antelope, and Vaughn's kob, for instance, are unrivaled in any European museum. We brought back, I think, all told, some 14,000 specimens of mammals, birds, reptiles, fishes, etc.

Let me repeat, that I cannot overemphasize the part my companions played in the expedition. The chief value of the expedition came not from what I shot, but from what the naturalists, under the direction of Mr. Walcott, who were with me, did in preserving and collecting specimens. It is not a very hard thing to go off into the wilder-



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BULL HIPPO HAULED ASHORE AND READY FOR SKINNING: LAKE NAVAISHA

ness and kill an elephant, or a white rhino, or a reticulated giraffe, or giant eland; but it is a very hard thing to get good photographs of them, and a still harder thing to cure and transport the skins and skulls of a number of such specimens. I can give you, perhaps, an idea of the amount of work done when I mention that we used on the trip ten tons of salt (all at times carried by native porters) in order to cure the skins; that when we killed elephants, for instance, we would have to use 20 men to carry each elephant's skull.

In going down the While Nile, for instance, the river is so broken by rapids that we could not use a boat from Nimule to Gondokoro, and for the ten days' march between those two places our expedition included 450 men, for all the skins and skeletons had to be transported on porters' backs. There were no camels or other beasts of burden; men live with difficulty there, and beasts of burden not at all, so everything had to be carried on the backs of porters. It was no small task providing for the feeding of the porters throughout the journey.

The work was throughout most interesting; but it represents much genuine toil and many difficulties overcome, and we could not have done it at all if it had not been for the hearty way in which the representatives of the Smithsonian and their friends backed us up, financially and otherwise. A hunting trip by itself is simple enough, but a trip of the kind we took is one that entails much forethought, a great deal of expense, and a literally incredible quantity of labor. So much by way of introduction.

I wish that I had a map of Africa here. You are all familiar with the shape of the continent, the northern part being a broad expanse practically filled with one vast desert stretching from the Atlantic across the whole continent to the Red Sea. This desert is broken at only one point, where the Nile runs from the south northward, making a little strip from a quarter of a mile to a couple of miles broad, on which there is cultivation, and where there can be an abun-

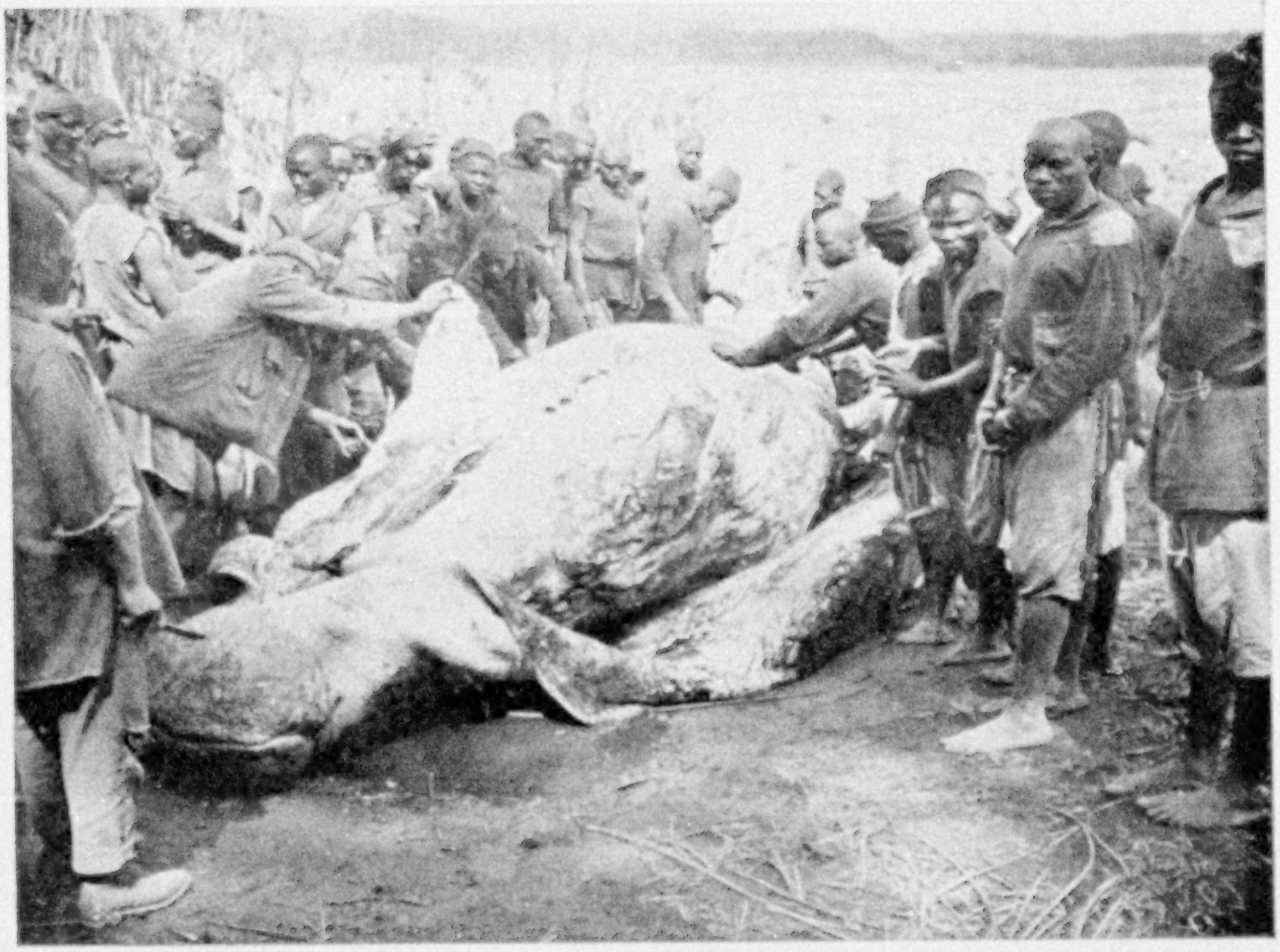
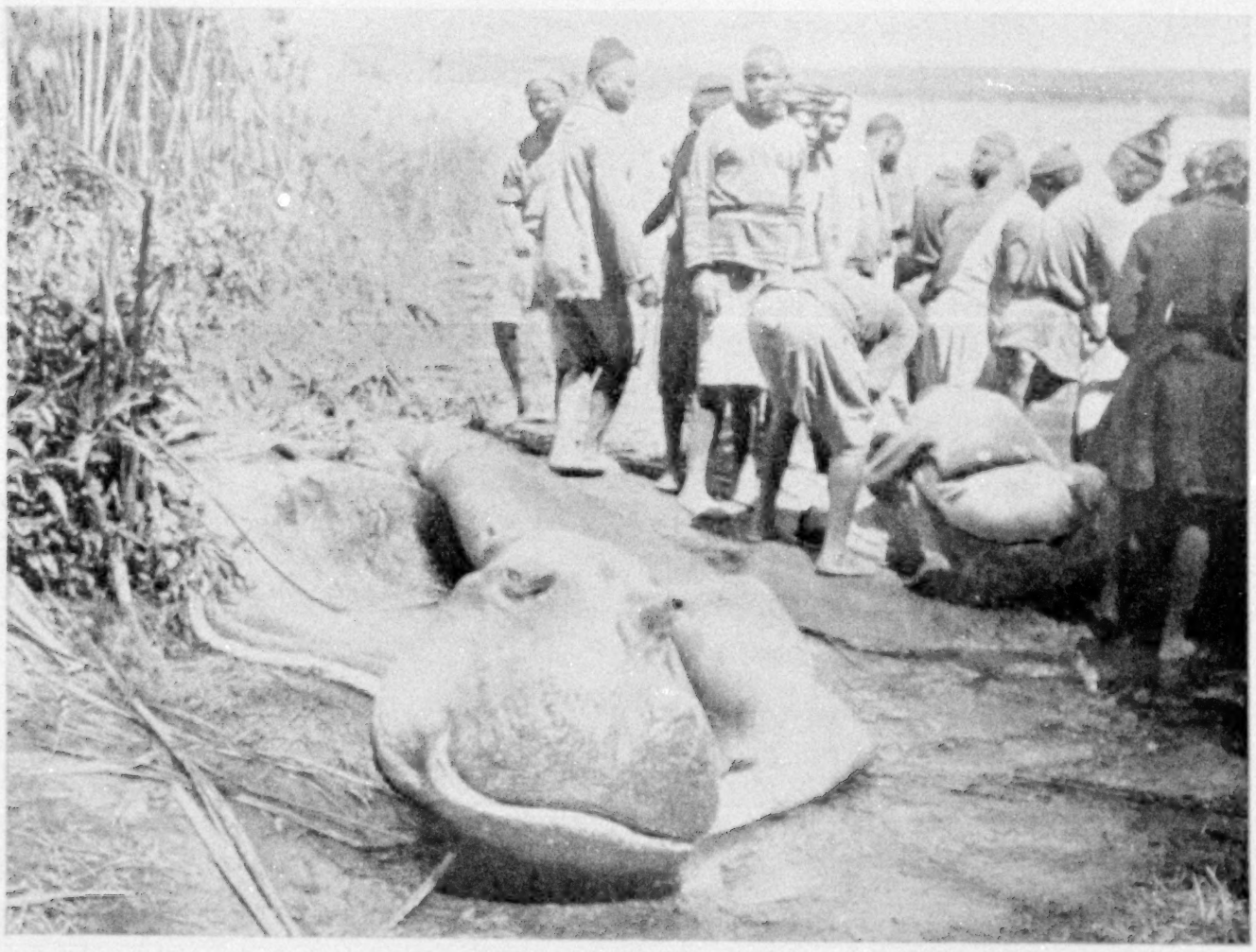


Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

SKINNING THE HIPPO

dant life. South of the desert region lies Africa proper—the Africa of zoologists, the recently unknown Africa, the Africa that has become open to white explorers, merchants, missionaries, and scientists only within the last half century. Our expedition landed on the east coast of Africa a little south of the equator, went right across the belt of fever-haunted lowland, the fever-haunted coast region, on to the high, broad, healthful uplands of equatorial East Africa, crossed it, went to the great central lakes of Africa, the great Nyanza lakes—Victoria Nyanza and Albert Nyanza—and then went down the Nile, traveling from south almost due north, and came out at Khartum, in the Sudan.

There were no real hardships connected with the trip. There is, of course, a mild amount of danger in chasing the wild beasts, and there is a good deal more danger from disease; but we were fortunate enough not to lose a single white man on the expedition. We had casualties to two of our native attendants from wild beasts. One man was mauled by a leopard and one man was tossed by a rhino. A very few died from dysentery and fever, because it is almost impossible to make them take care of themselves. For instance, we could always get the white men to boil their water before drinking, but we could not make our porters do this. They looked upon it as a superstition upon our part—as one of the queer vagaries of the white people, the strangers from over the seas, which had no foundation in reason. Personally, I grew to be really very much attached to our attendants. They were like great big children. They live a perfectly grasshopper life, with no capacity to think of the future. For



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PREPARING THE SKIN FOR SHIPMENT

instance, when I was off by myself, with a small safari of from 30 to 40 porters, if there was a rain threatening and we had a long march, I would have to threaten personal violence, and sometimes resort to it, in order to make the porters put up shelters for themselves before the rain came. I had to watch over them just exactly as if they were so many children. I was glad to do it, and our personal followers took the utmost care of us in return and usually showed a desire to look after our welfare that was really touching.

We did not stay on the coast belt for more than a very short time. Dr. Mearns made a short scientific trip there, and my son made another trip after a species of sable antelope which proved to be new. But it is a very unhealthy country, and we did not want to keep the expedition, as such, there any longer than we could help. The highland region, where we spent half of our time while in Africa, is a region of country that in its external features resembles not the Africa of the geographic books, but part of our own West. Most of the higher land of British East Africa, in the regions where we were, reminded me rather of the eastern portions of Wyoming and Colorado, and of parts of New Mexico and Arizona, than of what we are accustomed to think of as the tropics. Of course, there was an infinite difference in detail, but the general effect was the same. It was a region of light rainfall, and that rainfall came in the shape of a violent rainy season, so that there were periods when the rivers would run as boiling torrents, and then long periods when the rivers would be totally dry or consist merely of strings of shallow pools. Over most of the plains there were scattered thorn

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KERMIT'S BUFFALO HEADS ARE BROUGHT IN

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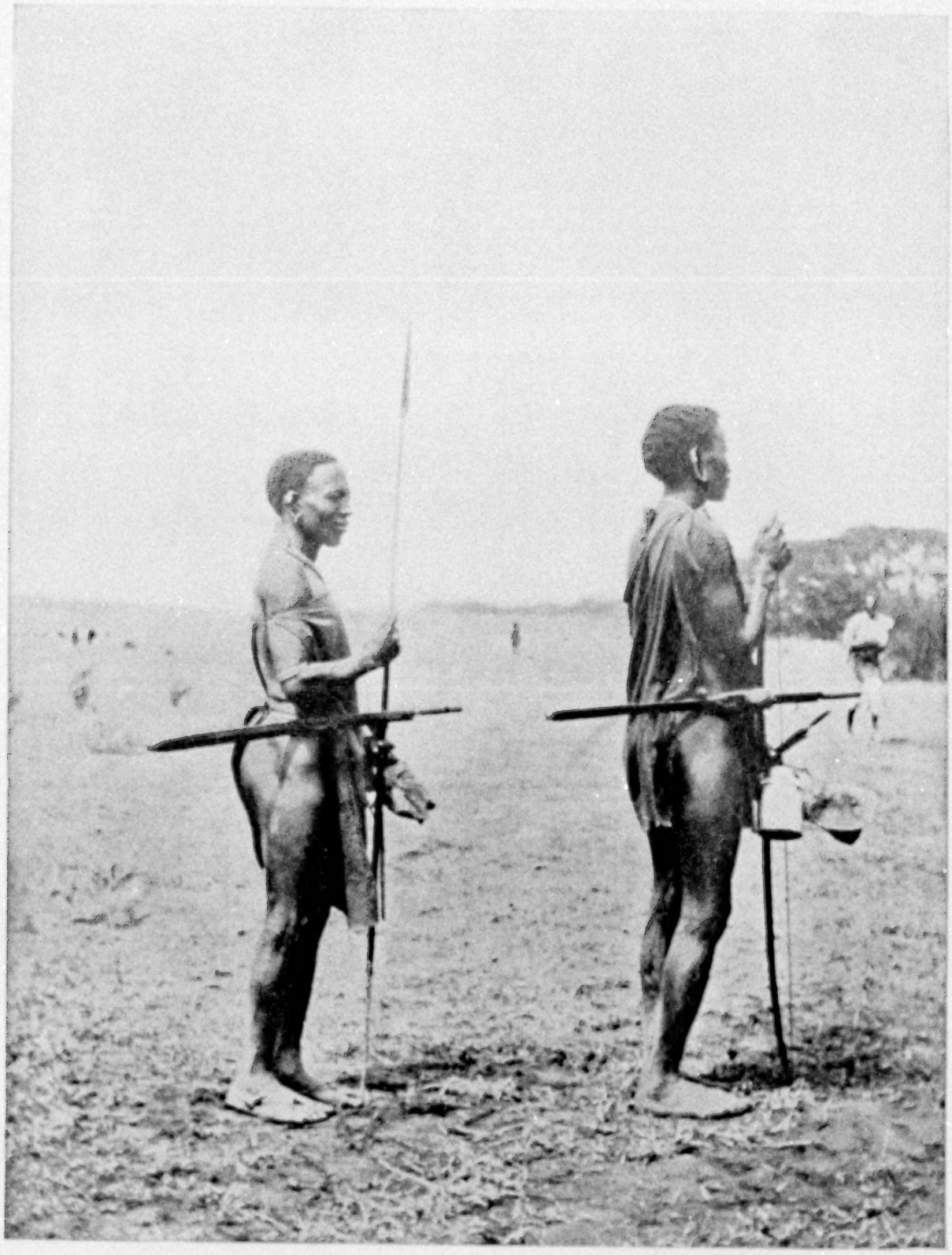
TURNING THE CARCASS OF THE MERU BULL ELEPHANT



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OUR TWO MASAI GUIDES IN FROM THE SOTIK TO NAVAISHA

trees and huge euphobias. Elsewhere they were mere seas of withered grass. Out of these barren plains rise great mountains, right under the equator, with snow-peaks.

I was camped under Mount Kenia, directly on the equator, a little over a year ago, when I received news that the Pole had been discovered by an American. My judgment about the first American who asserted that he had discovered the Pole I am happy to say coin-

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

TWO N'JIEMPSI CATTLE HERDS: THE SMALL BOYS ALL CARRY SPEARS: NEAR BARINGO

cided with that of the National Geographic Society. I was camped on the foothills of Mount Kenia when a special message was sent up by relays of runners to tell me that the Pole had been discovered. But they named the wrong man; and, as I had heard something of his alleged mountaineering exploits in Alaska, I declined to send back a message of congratulation. But about a week afterwards I got another message, telling me that Peary had discovered the Pole, and I said, "That is genuine. I will bank on Peary." So I sent out my message of congratulation; and I told the people who were with me then to watch and they would find that the National Geographic Society would look into that business and declare for Peary. I was rarely more pleased than when I found that that was just what the Society had done. For that reason alone I should certainly have come here to make my first report upon the expedition.

I spent several months in this East African region, going north, where the table-land sank lower and lower until we got to the dry, hot desert country of the Guaso Nyero, an equatorial river. Then we went across Victoria Nyanza into the low-lying very fertile and very unhealthy central African region, Uganda. In East Africa the natives were pure savages, ranging from the mere hunter-tribe type, the so-called 'Ndorobo of the mountain forests, to pastoral and agricultural tribes who live out in the plains or on the forest border. There were wide differences among these tribes, some of them very significant.

Photo by J. Alden Loring. Copyright by Charles Scribner's Sons

MASAI WITH A STRETCHING STONE IN HIS EAR

The purely negro tribes, the tribes of pronounced negro type, throughout East Africa, were for the most part agriculturalists. Whenever we came upon a region where the people lived in beehive huts and tilled the ground, we were certain to find a nearly pure negro type; but there has been all through that country for ages an infiltration of northern races. I cannot speak of these races with ethnic exactness, because no one can; and the linguistic and racial types often fail to correspond. But you will understand what I mean when I say that they are of dark Arab type, being either black or a very dark brown or yellow, but of the northern type of features. These races have come down from the north and have mixed with the negro type — with the negro aboriginals. But the mixed race has kept some curious points of unlikeness to the surrounding natives. Wherever you meet a pastoral tribe you will find men many of whom show traces of this northern origin—many of whom have clear-cut, aquiline features; and those men you never find living in beehive huts. They live in queer square huts placed in a ring, making what we would call in the West a big corral—a big ring fence in which their cattle are kept. The pastoral tribes which we met north of the Guaso Nyero had camels, and north of these are tribes which own horses. But the Nandi, Masai, and other tribes south of them have neither camels nor horses; they own large herds of cattle, with donkeys, goats, and hairy sheep. They do not till the soil; they live exclusively on meat, blood, and milk. I hate to shock the vegetarians, but I am bound to say that those people, who never eat anything but meat, blood, and milk, are as hearty and strong a set of people as I have ever seen in my life. Many of the Masai and Nandi are particularly fine looking.

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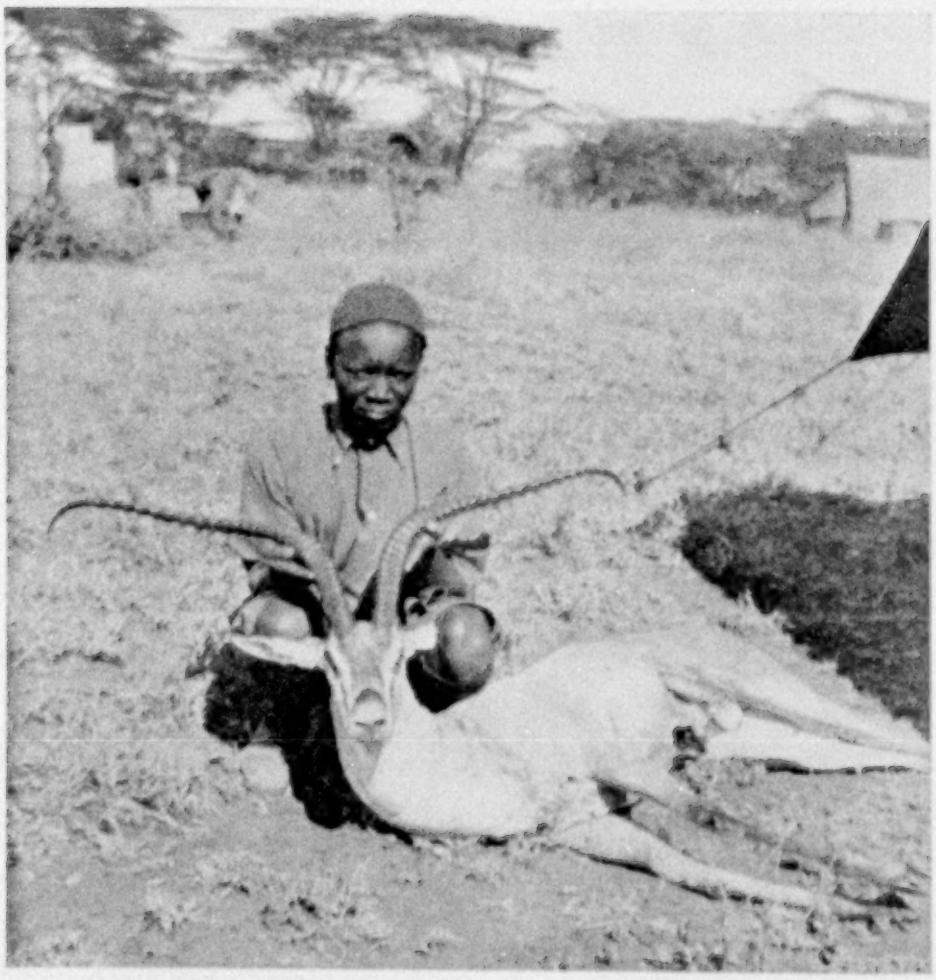
PORTERS CARRYING PELVIS OF FIRST ELEPHANT



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SULUMANI, MY TENT BOY, AND CUNINGHAME'S RECORD ROBERTSI

I shall always keep in my mind the memory of one evening when I had killed a lioness. The porters with me were, as they always are, very much excited over the killing of a lion, for the lions are often man-eaters, and kill many of the natives, so that the natives like to reciprocate and see the lions killed. I had killed this lioness quite late in the evening, and the men asked permission to carry it in whole to camp. I did not think they could do it, but I let them try. They started carrying the lioness in relays. It was a very heavy load. After a while they found that it was heavier than they had thought. We were about ten miles from camp, and we had gone only about a mile when

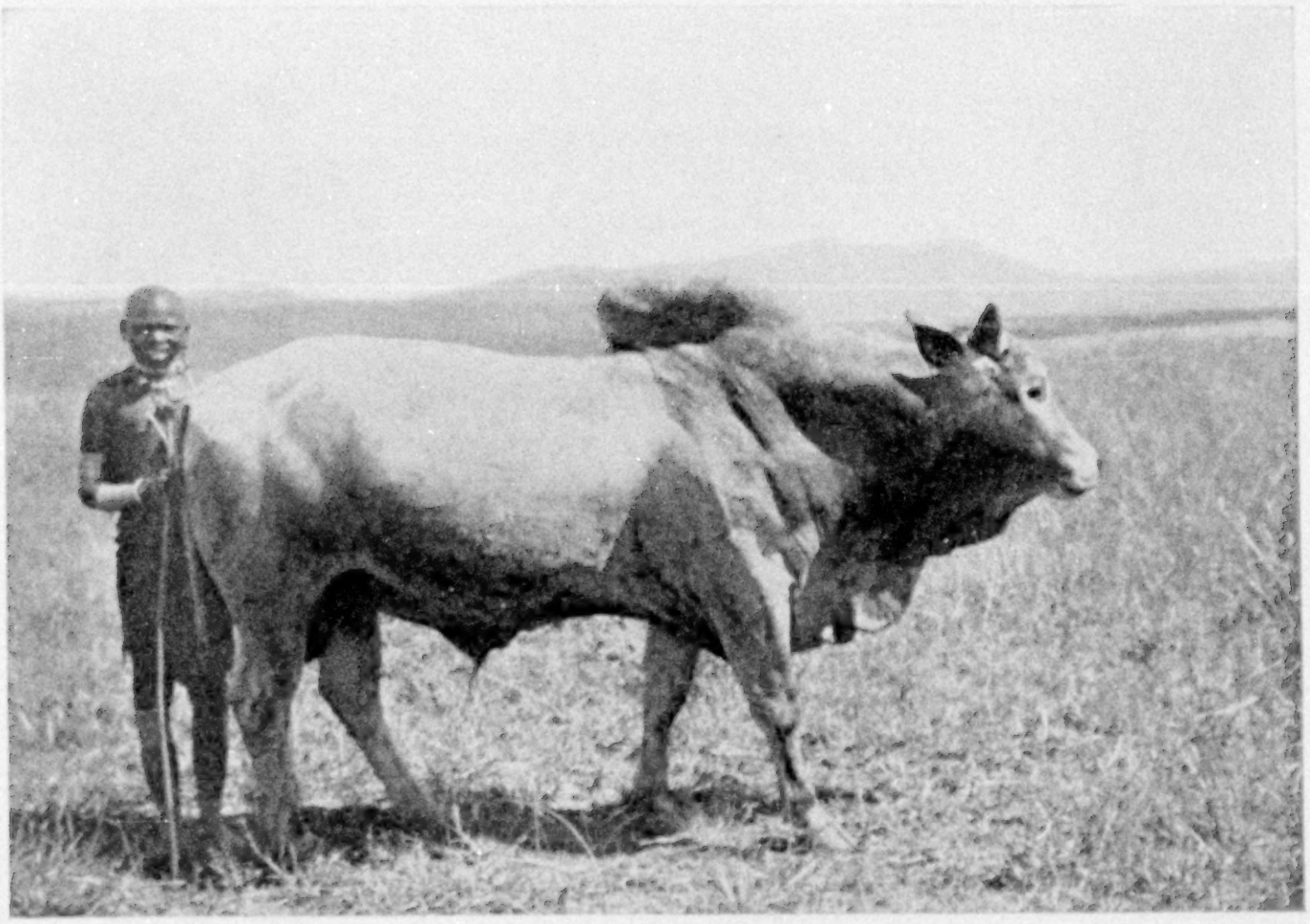


Photo by Cuninghame. Copyright by Charles Scribner's Sons

THE HUMPBACKED CATTLE IN THE MASAI COUNTRY

darkness set in. There was an element of interest in going through that part of Africa at night, because then all the wild beasts were abroad. On the occasion in question we were accompanied on one side by a lion for one-half an hour. I do not think he could quite make us out. He could smell the dead lioness and he also smelt us; but I do not think he knew quite what had happened; and so he walked alongside us for a couple of miles, moaning or yawning as he went. Of course we had to keep a lookout for him. I had another white man with me, and either he would go ahead and I behind, or vice versa, so as to keep the porters closed up; because, in a case like that, if a lion does attack a party of travelers, he is most likely to seize the one behind. We still had the lion on one side of us when suddenly on the other side there was a succession of snorts like a steam-engine blowing off steam. It was a rhinoceros, I think two rhinoceroses, up on that side.

While a rhinoceros's short suit is brains, his long suit is courage, and he is a particularly exasperating creature to deal with, because he has not sense enough to know that you can harm him, and he has enough bad temper to want to harm you, so that there is often no way of keeping rid of him except by killing him. Of course we did not want to kill anything we could help—anything we did not use—and we still more strongly objected to being killed ourselves. It was almost pitch dark and there was no moon, although there was star-light. We would hear this rhinoceros snort, and then we would run forward and kneel down or lay down on the ground and try to catch the loom of the rhinoceros against the sky-line, so that we would have a chance to shoot him if he came on. I sometimes had to adjure the porters—I use a mild word when I say "adjure"—in order that they might not break and scatter, when one or more would probably have been

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

FLAMINGOES ON LAKE HANNINGTON, CALLED BY THE NATIVES Z'WA ONDAGE: "THE LAKE OF THE BIRDS"

Settler's small boy with pet "Tommy" gazelle. Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

killed. Finally we left both the lion and the rhino and came to a Masai corral, which was about three miles from our camp. The men carrying the lioness were very tired and I thought it best to stop and skin her. So we called to the people inside of the corral to let us come inside and skin the lioness. At night the cattle are put in the middle of those corrals—those big fenced inclosures with square huts around the edge. The Masai replied that we could not come in, because the smell of the lioness would make the cattle stampede. I think they were a little suspicious of us. My companion offered to give them his rifle to hold as a proof of our good intentions; but they said no; that they didn't want that. They handed us torches; we started a fire. They finally became convinced that we were peaceable, and then they came out to witness the skinning. The porters crouched near the blazing fire, and our gun-bearers started to skin the lioness. Tarlton, the Australian who was with me, and I stood behind, holding the bridles of our horses. Masai warriors and girls came out and, forming a circle around the porters, chaffed and jested with them. There was one man,

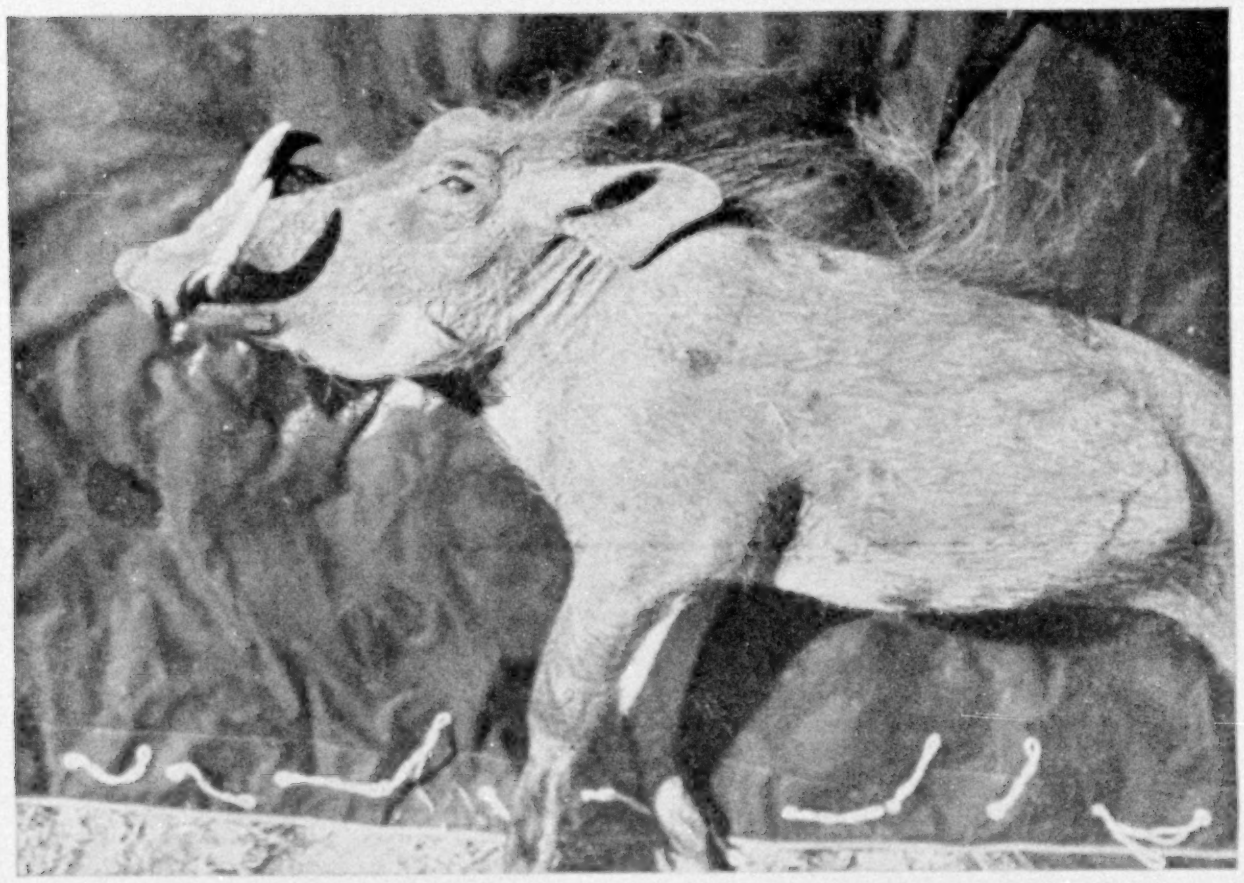


Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

A WART HOG

evidently the wit of the Masai camp, who described how the Swaheli would go out with the white man to hunt lions; how the Swaheli would find the lion, and then the lion would seize him and bite him, whereupon he would cry and call for his mother. Loud laughter greeted this sally, and the gun-bearers retorted with jest about the lions at the expense of the Masai; how the lions would kill the Masai, but how they could not kill the white man, for the white man killed the lions. As the Masai stood there, the fire lighting up their faces, they reminded me strongly of the pictures of the soldiers of Thothmes and Rameses by the Egyptian sculptors. They had the clear-cut features and the hard, resolute countenances that you see indicated in the sculptures on the temples that commemorate the victories of the mighty Egyptian kings over Hittite and Nubian. Those men looked as if they were blood kin to the Egyptian soldiers who 4,000 years ago made the great Egyptian Empire that extended from the upper Nile to the Euphrates.

Another thing about these natives of East Africa: their clothing was very scanty. In one tribe, the Kavirondo, the men and women literally wore nothing. The curious thing was that those people had extremely good manners. They were very courteous and perfectly at ease—at least the chiefs and the gentle folk—but they did not have any clothes—not a stitch.

When we struck Uganda we found an entirely different and a very curious little semi-civilization. Right in the midst of this huge sea of black savagery there had sprung up this island of progress, representing the beginning of a very primitive civilization.

It is very difficult for us to realize how modern our knowledge of mid-Africa is. I can perhaps bring it to your mind by telling you that in 1858 the first successful efforts were begun toward the exploration of mid-Africa and the finding out of the source of the Nile, Speke, Grant, and Baker being the men who made the actual discoveries. That is about half a century ago. Just before

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

STRIPED HYENA CAUGHT BY HELLER

The expedition took hundreds of traps with them with which they obtained thousands of small mammals for the National Museum.

they went on their expeditions a map of mid-Africa was published under the auspices of the Royal Geographic Society in England, and on that map the sources of the Nile were more imperfectly shown than they were shown on the map of the Ptolemies in the year 150. In other words, during 17 centuries the geographic knowledge of Africa had gone slightly backwards. The men of the first half of the nineteenth century—the scientists in England, in France, in Germany, and in Italy of the first half of the nineteenth century—knew less about the geography of middle Africa than the scientists who lived in Antioch and Alexandria and Rome in the first half of the second century. As a whole, during 1,700 years knowledge had gone a little backward as regards that part of Africa.

When those first explorers reached Uganda they found a semi-civilized region where both men and women were well clothed; where they manufactured their own cloth; where they had good ironsmiths, good workers in iron; where they tilled the ground; where they used musical instruments; where they had, curiously enough, joined to a very cruel despotism of the regular African type a system of representative government. It is not possible to tell exactly how that little semi-civilization arose. Probably what happened was, that there came a tribe of northern invaders—men of Hamitic or bastard Semitic blood—who conquered these negro tribes of middle Africa. The invaders were a comparatively light-skinned, pastoral people, with herds of long-horned cattle. Some of the invaders remained almost separate. Others mixed with the negroes, producing a type that is predominantly negro, with a slight strain of the northern invader. It was this mixed type that went upward, and not the relatively pure type of northern invader; and now the pastoral people occupy a distinctly subordi-

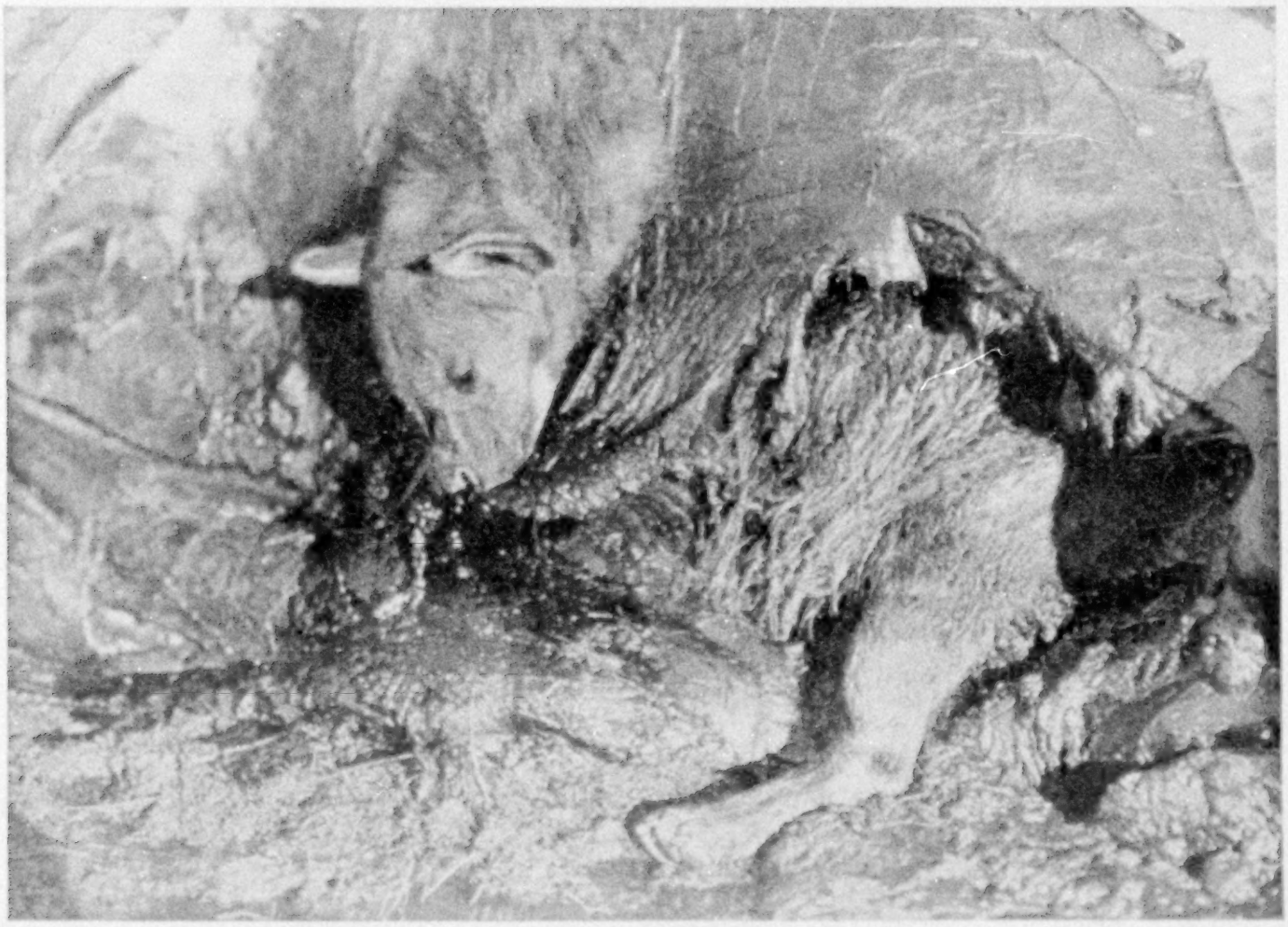


Photo by Akeley. Copyright by Charles Scribner's Sons

AN UNUSUAL TRAP: A HYENA CAUGHT IN THE BELLY OF A DEAD ELEPHANT

"The hyena, which was swollen with elephant meat, had gotten inside the huge body, and had then bitten a hole through the abdominal wall of tough muscle and thrust his head through. The wedge-shaped head had slipped through the hole all right, but the muscle had then contracted, and the hyena was fairly caught, with its body inside the elephant's belly, and its head thrust out through the hole. We took several photos of the beast in its queer trap."—From "African Game Trails," by Theodore Roosevelt. Charles Scribner's Sons.

nate position to the negroid agricultural people, who form the bulk of the kingdom, and they are very distinctly less advanced in civilization.

The English have been wise in the way they have cared for these people. They have developed them along their own lines, instead of trying to turn them into something entirely different. On the whole the effect of white influence on the native tribes shows to better effect in Uganda than in any other part of Africa south of the Sudan that I saw.

Many of the chiefs are distinctly semi-civilized, and some of them write English well. Two or three have kept up quite a correspondence with me since I left. One of them sent me a gift of four hippopotamus tusks and a leopard's skin, together with a letter of condolence on account of the death of King Edward! This particular chief had done everything he could for me while I was at Lake Albert Nyanza. I had little to give him, as I had exhausted about all my presents. However, I still had a watch with the hands and the figures of the face picked out with radium, so that one could tell the time at night. I gave him this watch, and he and all his companions spent the entire night looking at it. Since then he has been one of the most grateful people I have ever known, and has written me twice. I try to think of

Photos by Kermit Roosevelt. Copyright by Charles Scribner's Sons

MR. ROOSEVELT WITH HIS BIG BULL RHINO

MR. ROOSEVELT AND KERMIT ROOSEVELT WITH GIANT ELAND HORNS

Mr. Roosevelt and his son secured three specimens of this huge antelope for the National Museum; they are the first specimens ever brought out of Africa

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

THE BUFFALO PATH THROUGH THE PAPYRUS

something in this country sufficiently interesting to him to write him, but it is a hard matter to do so.

Of course, to a hunter or a naturalist, one of the absorbingly interesting features of the part of Africa that I visited is the enormous and wonderfully variegated fauna. It is literally as if the fauna of the Pleistocene had come to life again. A couple of hundred thousand years ago, or thereabouts—I do not pretend to be accurate in geological time — there was in Europe and here in North America a similar wonderfully varied fauna of great and beautiful and terrible wild beasts. But now we have to go to Africa or to a few places in India to find anything like it. And in Africa where I went the absorbingly interesting thing is that right on top of this Pleistocene has been imposed the twentieth century civilization. A railroad runs from the coast up to Lake Victoria Nyanza, through a country where man is just as primitive as our cave-dwelling ancestors were a hundred thousand years ago, and where men are fighting practically the same beasts as those ancestors of ours fought.

I really doubt if there is a railroad trip in the world as well worth taking as that railroad trip up to the little British East African capital of Nairobi. The British government has made a great game preserve of part of that country. On the trip from the coast, Governor Jackson, who had very courteously come down to meet me at Mombasa, and the great English hunter Selous and I passed our time on the cowcatcher of the engine, and it was much like going through the garden of Eden with Adam and Eve absent. At one spot we would see suddenly six or eight giraffe going off at their peculiar rocking canter. Then we would see a herd of brightly colored hartebeestes, which would pay no attention to the train at all. Then we would come around a curve and the engineer would have to pull his whistle frantically to get the zebras off the track. The last of the herd would kick and buck and gallop off 50 yards and turn around and again look at the train. Then we would see a rhinoceros off to one side; and so on indefinitely.

Nairobi itself is a town of perhaps

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

MR. ROOSEVELT AND BUFFALO COW IN PAPYRUS GRASS, SHOWING THE DANGER AND DIFFICULTY OF BUFFALO HUNTING, WHEN YOUR GAME MAY BE ONLY 5 YARDS AWAY

5,000 or 6,000 people. To my mind it is a very attractive little town. It is very much scattered out, and the wild beasts come right up to the edge of the town. A friend, Mr. McMillan, lent us the use of his house in town while we were staying there, and a leopard came up to the piazza one night after one of the dogs. On another occasion one of the local officials, a district commissioner, going out to dinner on his bicycle in a dress suit, and naturally unarmed, almost ran over a lion. Fortunately the lion was much frightened and went away. On two evenings in succession I dined at houses. The dinner was much as it would be in Washington, London, or anywhere else, the ladies in pretty soft dresses and the men in the usual evening garb of civilization. The houses were about a quarter of a mile apart, and a few days previous a young lady, in the early evening, while

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

DANCE OF BOYS OF THE NYIKA TRIBE IN HONOR OF THE CHIEF'S SON, WHO HAD JUST DIED: NOTE THE RATTLES ON BOYS' ANKLES

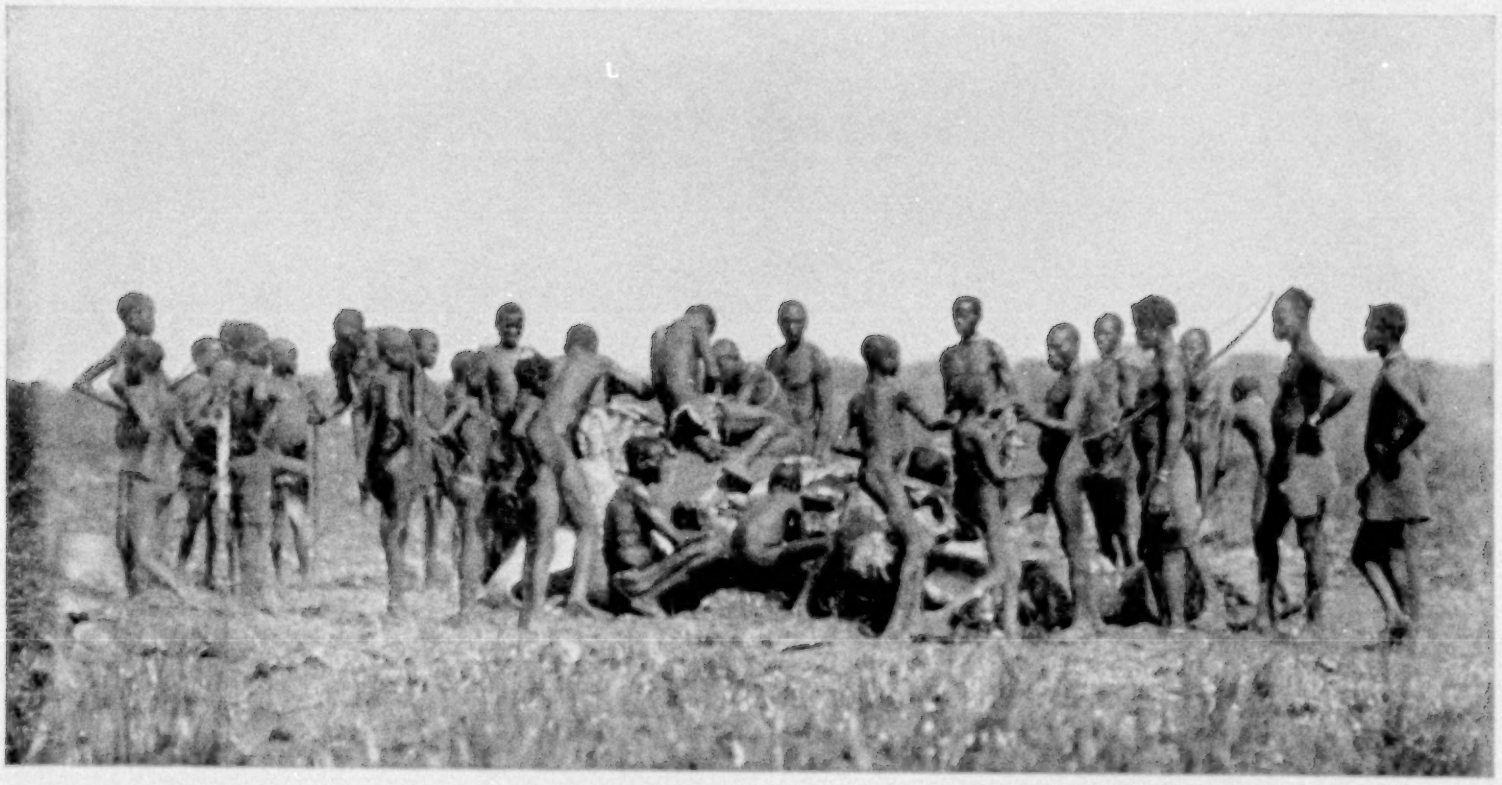


Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

GROUP OF NATIVES IN BELGIAN CONGO, NEAR RHINO CAMP, CUTTING UP AND TAKING AWAY THE MEAT OF AN ELEPHANT THEY KILLED WITH SPEARS

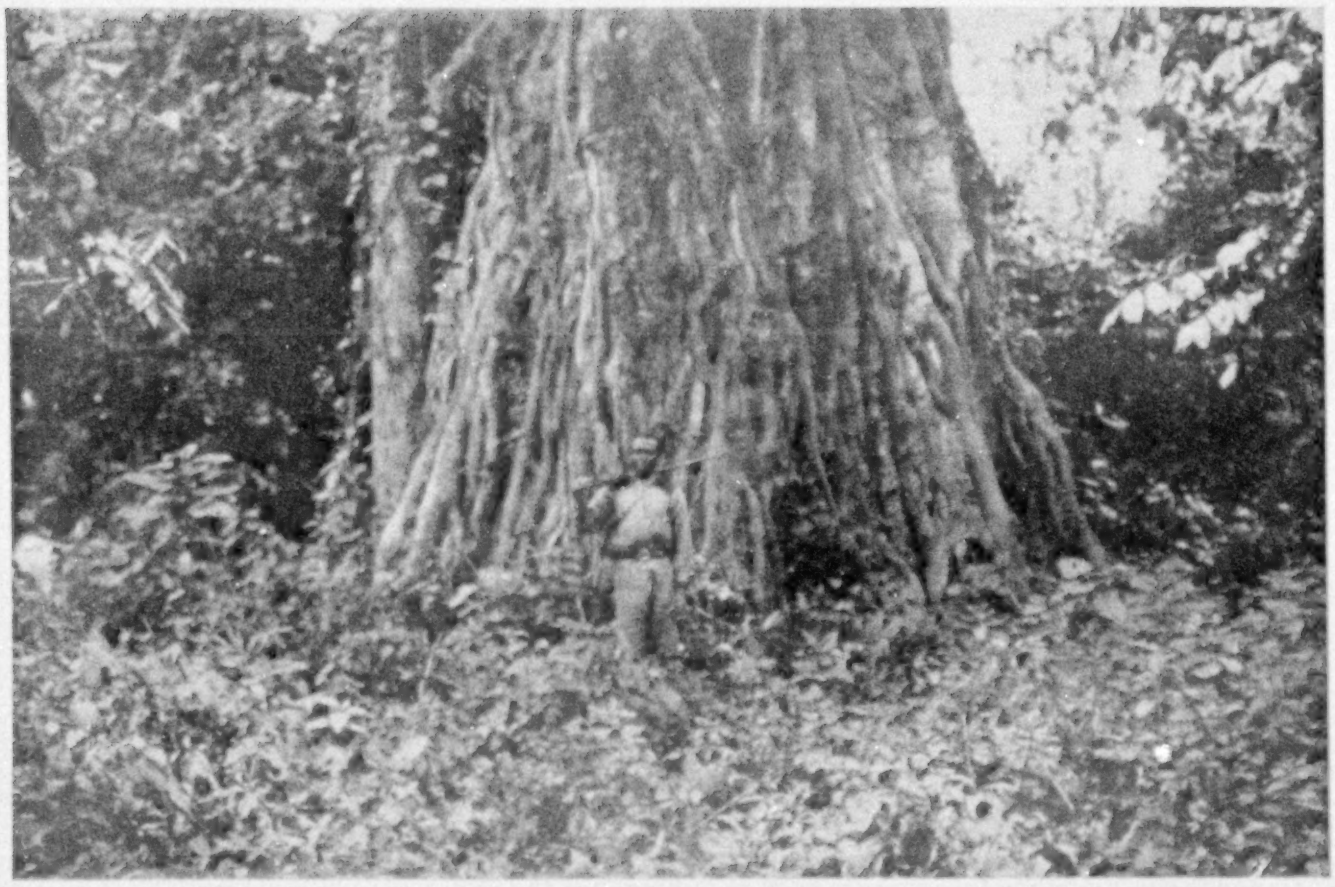


Photo by Heller. Copyright by Charles Scribner's Sons

TRUNK OF GIANT FIG TREE IN KENIA FOREST

bicycling from one to the other to take part in a rehearsal of "Trial by Jury," was knocked off her bicycle by a stampede of zebras, and was really quite hurt and had to give up the rehearsal. There was one incident to which really only Mark Twain could have done justice.

We all know—any of us who have had any dealings with government offices—the type of bureaucrat who upholds to the letter the rules of his office, even if the heavens fall. Among the "rules" out in East Africa are some excellent game regulations. The head of the reclamation service, a British army officer, Captain Smith, was trying to raise flowers and vegetables, and was much bothered because the zebra and antelope would come in and eat them. One night he heard some zebras in the garden and he sent out the gardener, a wild Masai, with instructions to drive the zebra out. The gardener killed a zebra; whereupon an upright judge *fined the gardener for killing game without a license!* I do not think that the most sensitive soul could object to my calling *that* judge fossilized.

Well, Captain Smith made up his mind that next time he would strictly observe all of the forms of law. So he arranged some wire entanglements around his garden, and when the next herd of zebras came in he and his gardener sallied out, and, when one of the zebras got tangled up in the wire, they captured him, took him down to the pound, and gave him to the poundmaster. The authorities, however, were equal to the situation. They advertised for two weeks for the owner of the zebra! The owner failing to appear, they then sold him at public auction to a citizen, who gave five shillings for him—which was probably at least five shillings too much.

The largest terrestrial mammal, next to the elephant, is the white rhinoceros. It was formerly found in South Africa, where it is practically exterminated. It was not supposed to exist anywhere else; but within the last few years it has again

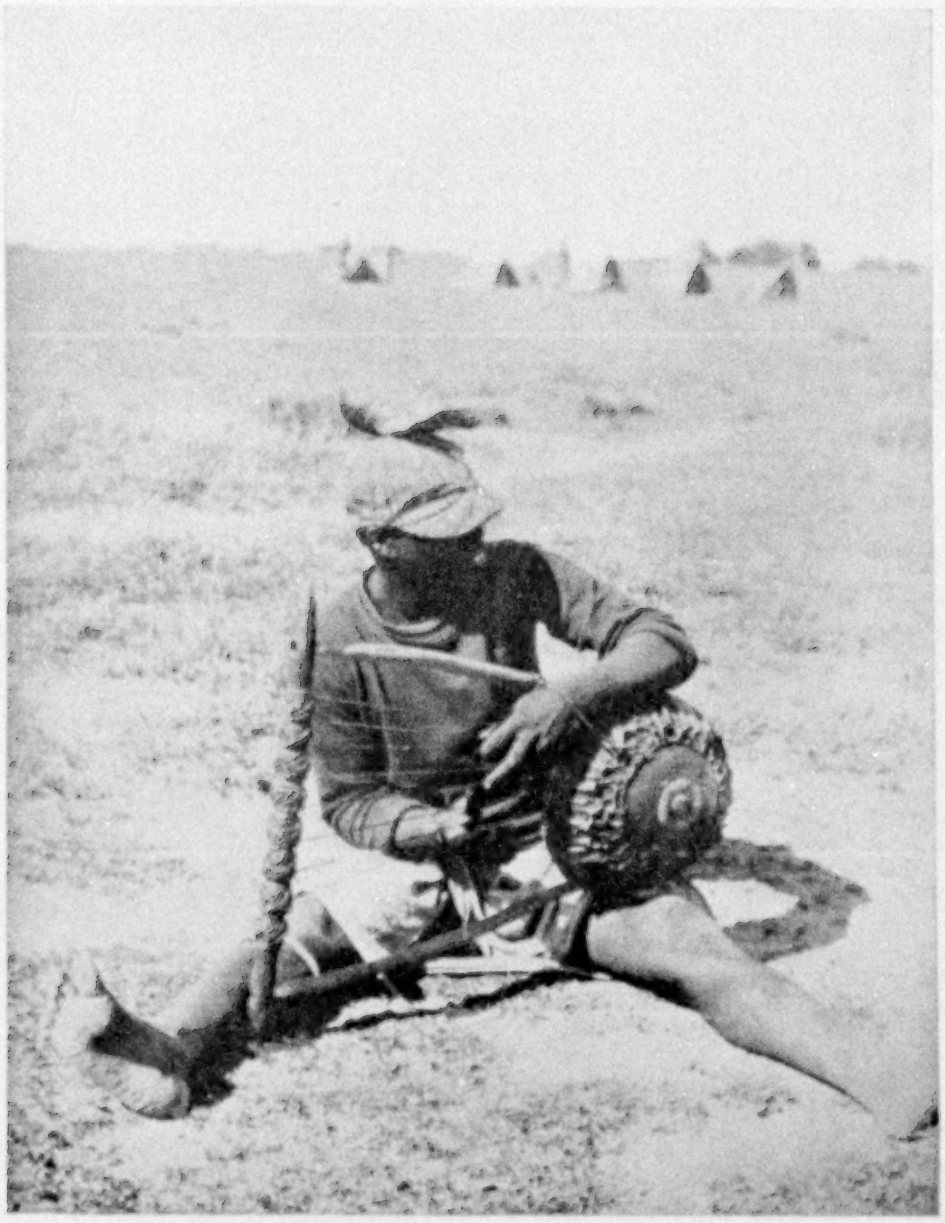


Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

OUR PORTER HARPER

been discovered, along the headwaters of the Nile in mid-Africa. This is much as if the bison had only been known in Canada; had become exterminated there, and had finally been found again in Guatemala. There is just as wide a space of territory in between from which the species had totally disappeared. We obtained a full series of skins and skeletons of these huge beasts.

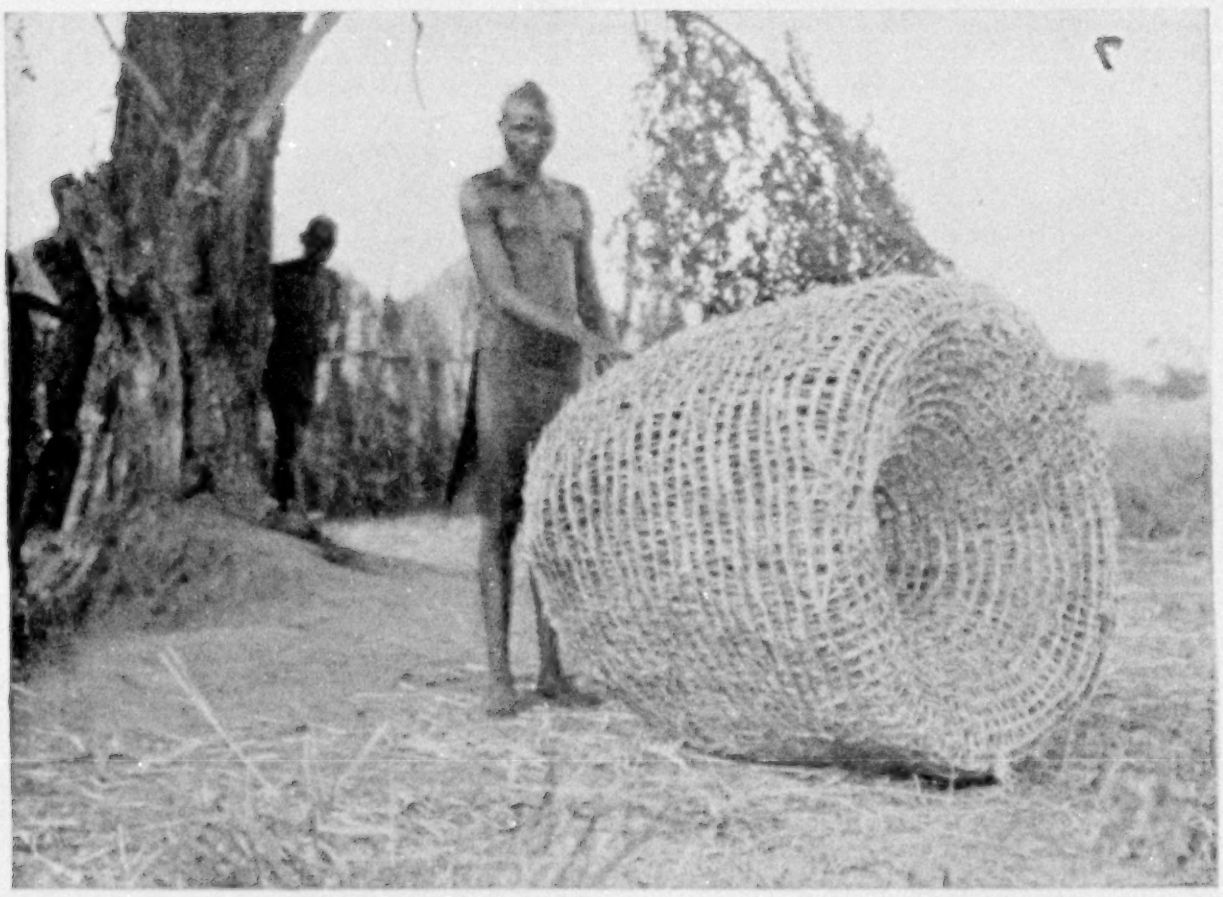
The two beasts that are the most interesting to my mind, as indeed they are to most hunters, are the elephant and the lion. A really successful effort is being made to preserve the elephant in East Africa. The bulls are only allowed to be shot after they have reached a certain point in the development of their tusks, and the cows and young stock are not allowed to be killed at all. The result is that, while of course there has been a diminution in the number of elephants, I think that they are now holding their own in many parts of East and Central Africa. Elephants are always interesting. It is rather exciting to study them in their haunts, because you have to watch them carefully, and there is some risk if you are discovered. I do not myself think that an elephant is quite as dangerous as a buffalo, and I think it considerably less dangerous than a lion.

Photo by Heller. Copyright by Charles Scribner's Sons

TWO HIKUYU BOYS, FIRST ELEPHANT CAMP

Still, many of them are wicked, and they kill a good many people. When you get close to them and watch them for a time you will note that they are perpetually in motion. I have never seen an elephant entirely still. He will flap one ear; then he will suddenly put up his trunk and curl it and try to see if he can smell anything; then he will shift from one foot to another. They never seem to stand entirely still. When we were camping in the Lado, hunting white rhinoceroses, there were a good many elephants around. We had obtained our elephant series and did not want to molest them. Once, when walking about a mile and a half from camp, we suddenly saw a herd of 50 or 60 elephants accompanied by a flock of a couple of hundred white cow herons. When we first saw the elephants they were in an open flat, where the long grass had been burned. As the elephants walked through the short grass the herons marched alongside, catching the grasshoppers put up. As soon as they came to long grass all the herons flew up and lit on the backs of the elephants. There was one little pink elephant calf and two herons perched on its back. The elephants evidently did not mind the birds; otherwise they could have removed them with their trunks. Those elephants were quite indifferent to our presence if we did not come too near. While looking at them we heard Dr. Mearns shooting birds around camp; but it did not disturb the elephants. They stayed two days in the neighborhood, and we got as close a look at them as we wished. We did not want to have to shoot any of them; and, as an elephant cow will often attack a man if it thinks he is menacing her calf, we had to be cautious about going too close.

BORANS



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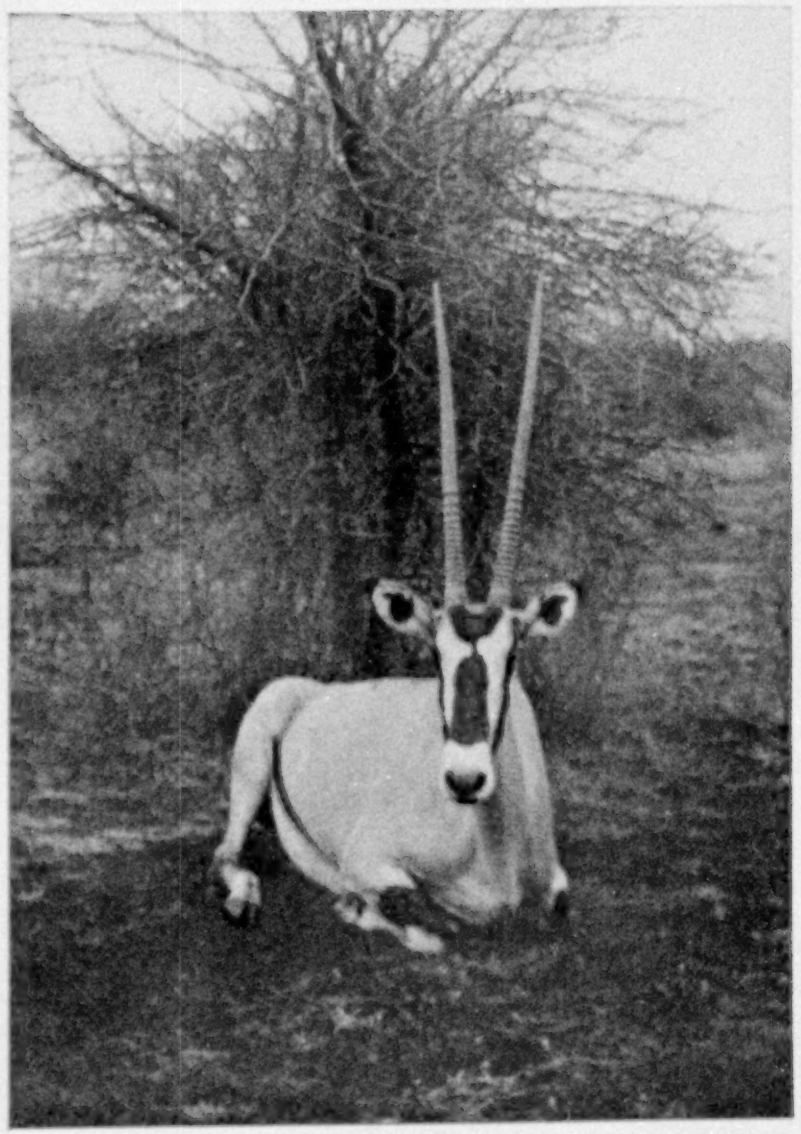
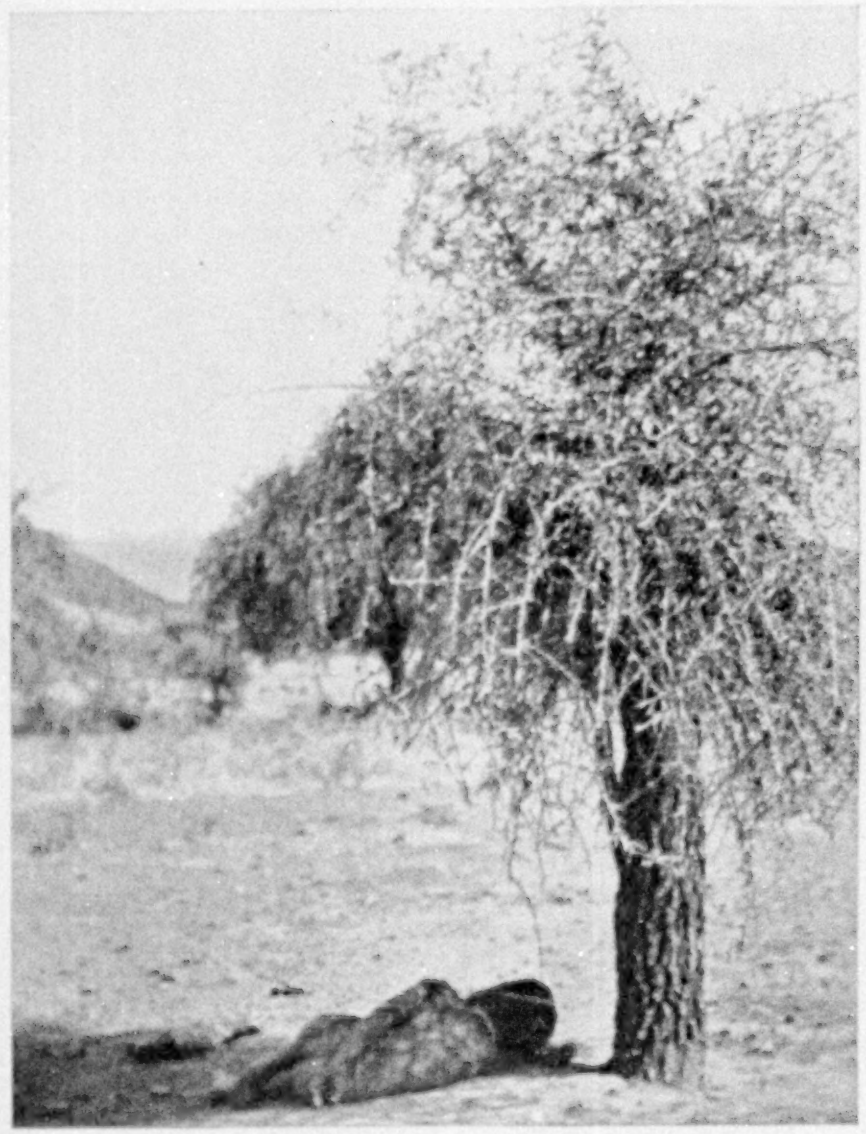
FISH TRAP: WADELAI

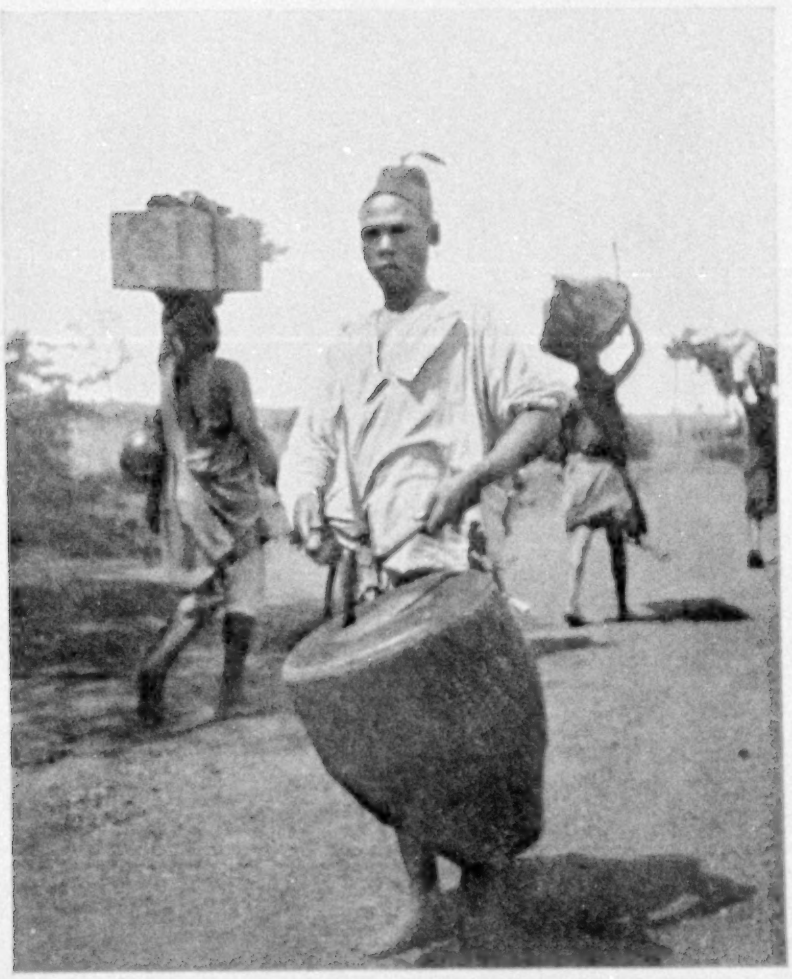


AN ORYX SHOT BY MR. ROOSEVELT



FUTURE WARRIOR TAKING A SIESTA

Photos by Kermit Roosevelt. Copyright by Charles Scribner's Sons



THE SAFARI DRUMMER

He would go on ahead to camp and then walk back, drumming to let the men know camp was near: Uganda. Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons.

The elephant is the most intelligent of game. The rhinoceroses were not as interesting as the elephants, because they were not as intelligent. After we had completed our collection of rhinoceroses it became quite a problem how to avoid them and get the other things we wanted. It is amusing to realize how soon we got to accepting our difficulties with rhinos as a matter of course. Here in civilization, if you asked a man to kindly go down and scare off a rhinoceros for you, the man would look at you with a certain surprise; in Africa it was a matter-of-course incident. When near a rhino there is always a chance that he will charge, whether through stupidity, or fright, or anger. The trouble is that one never knows whether he will or will not charge home. It often happens that after he has come to a distance of about 25 yards he will wheel and run off; but, not being a mind-reader, a man cannot tell whether a particular rhino does or does not intend to charge home. Cuninghame, who was handling the safari for us, would now and then send me off to scare away rhinos who were too near the line of march, and I would perform the task with gingerly caution. Once Cuninghame and I were hunting buffalo on the Guaso Nairo. We came on the trail of a herd, when suddenly Cuninghame stopped, and, turning around with his air of patient dejection, said: "Oh, Mr. Roosevelt, look at that rhino." I answered, "Yes, look at him." He continued, "I do not want to lose this spoor. Would you mind going down and frightening him off? But do not make much noise, because we do not want to frighten the buffalo." So I strolled down, trying to make up my mind how much noise I could make that would frighten the rhino and not the buffalo. I struck just about the happy medium; and, after meditating a little, with his ears and tail up, the rhino trotted away in zigzags until it was safe for us to pass. About half a mile on we sighted the buffalo and started to stalk them. We were just finishing the stalk when there arose a yelling like that of lost souls behind us, and away went the buffalo. Back we went, to find that one of the porters, when we halted to drive off the rhino, had lost his knife; and he and two others took advantage of our stalking the buffalo to run back to see if they could find the knife. By that time the rhino had returned. Evidently he thought that his dignity had been offended, and he went for the porters and tossed one of them. So we had to give up the buffalo for the time being and go back and give first aid to the injured porter.

The animal that I found most interest-

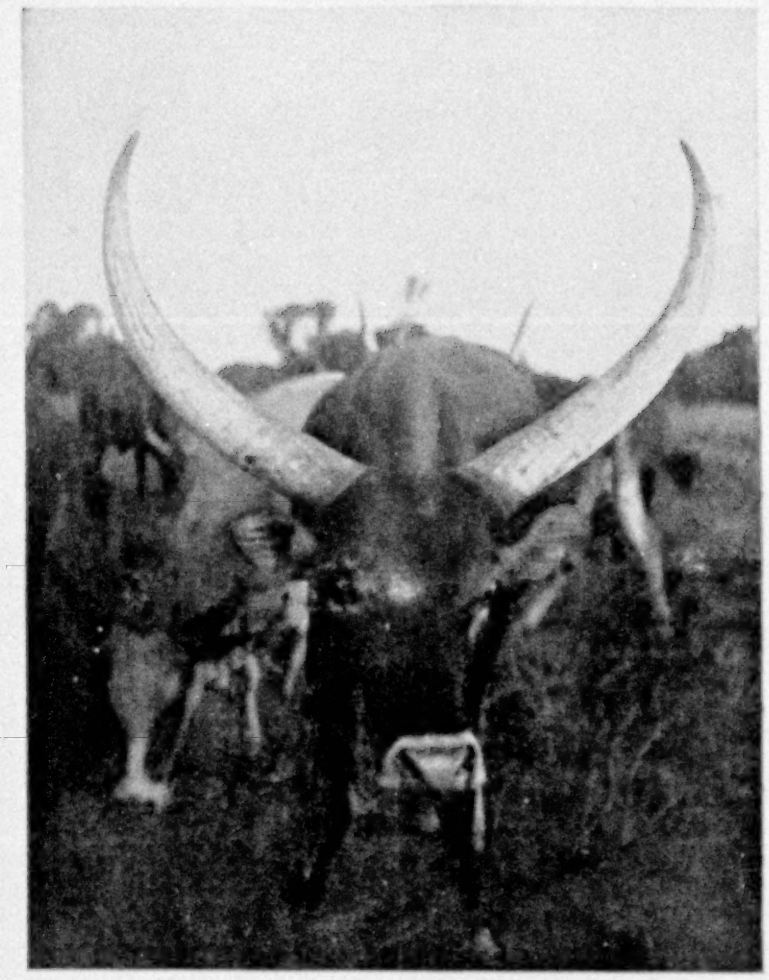


Photo by Kermit Roosevelt
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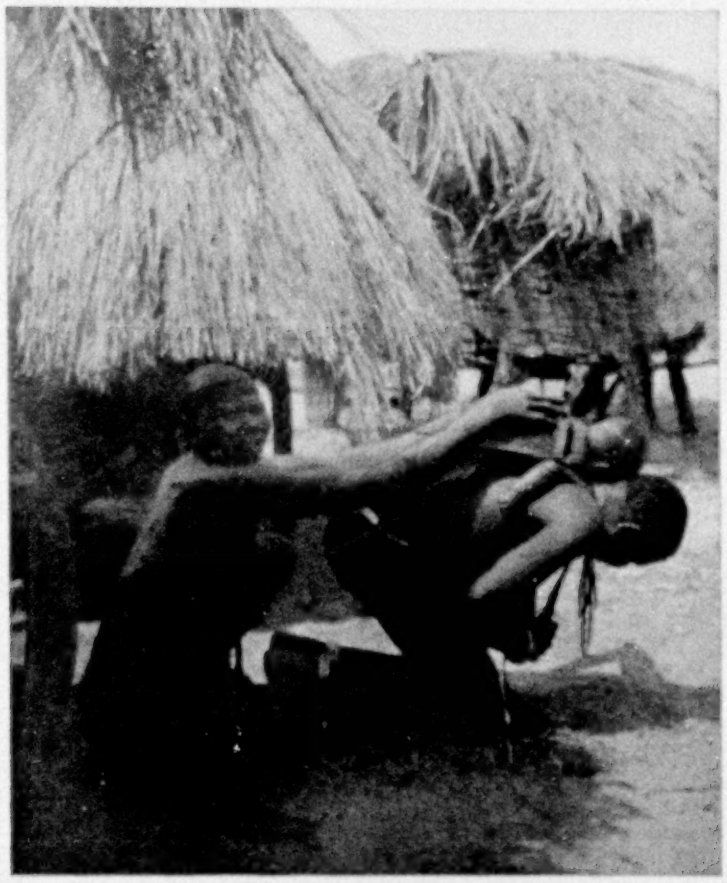
ANKOLI LARGE-HORNED CATTLE: UGANDA

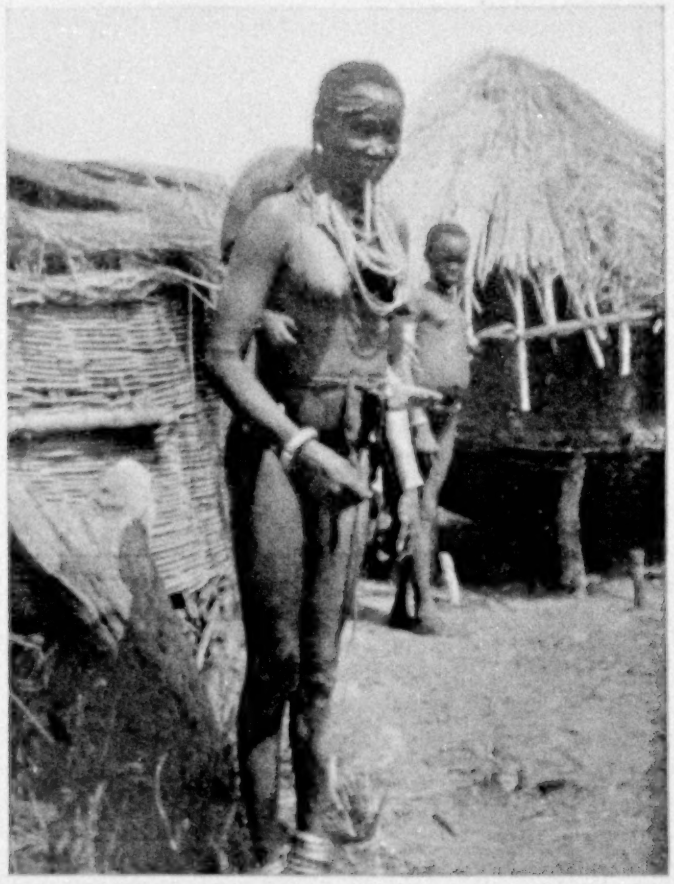
ing to hunt was the lion. I must tell one anecdote at the expense of two of my scientific companions. Dr. Mearns and Messrs. Heller and Loring all regarded the sporting part of the expedition as a pardonable but illegitimate incident of the trip, and the only anxiety that I ever knew any of them to display in connection with dangerous game was that we should not spoil the skull of a good specimen. One day when I was absent from camp Mearns and Loring were notified by a couple of Masai that two lions had killed a zebra a few miles off, and that if they would come out they could get them. They tossed up on the way as to which should have the lion and which the lioness, and Dr. Mearns drew the lioness. When they got there the lion had gone, so it was the Doctor's turn to shoot. He had been cautioning Loring on no account to shoot the animal in the head and spoil the specimen. But now the lioness put her head out of the bush directly toward the Doctor. He couldn't violate his principles and take the head shot; so Loring fired, hit the lioness, and it came for him. The Doctor's sporting blood was now up. He felt that it was not fair to interfere in an obviously equal match between Loring and the lioness; and, besides, if he shot at it he might hit the skull. Accordingly Loring was left to himself. He had a small automatic rifle; he put five bullets into the lioness and killed her; but she came right to his feet and stumbled past him 10 or 15 feet before she died. I think that Loring felt that he would have been willing that the Doctor should for a moment waive his scientific and sporting feelings and shoot the lioness!

The most interesting thing I saw in Africa was a feat that was infinitely greater than anything we performed with our rifles, although not greater than a feat that was recently performed in the same region by three American plainsmen, Buffalo Jones, Loveless, and Mearns, who roped a lion, a giraffe, and a rhino, and have got moving photographs of them. It was one of the really most notable feats I have ever known to be performed in hunting.

We saw the Nandi spearmen kill a lion with their spears, and I shall close my lecture by telling you about it. These people are a northern branch of the Masai. They are a splendid race physically—tall, sinewy fellows. The warriors carry ox-hide shields and very heavy spears, seven or eight feet long, the long-bladed head of soft iron kept with a razor edge and the iron of the rear half of the spear ending in a spike, the only wood that is bare being just about enough to give a grip for the hand. The brightly burnished head is about four feet in length. These Nandi came over on purpose to show me how they killed a lion with their spears.



FIXING THE BABY ON ITS MOTHER'S BACK



ON THE WOMAN'S BACK THERE IS A CHILD WITH HIS HEAD AND SHOULDERS COVERED BY HALF A GOURD

Photos by Kermit Roosevelt. Copyright by Charles Scribner's Sons

CHILD SLEEPING ON A BED IN SARURU'S VILLAGE: IN THE GIANT ELAND COUNTRY

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

WOUNDED WILDEBEEST SHOT BY MR. ROOSEVELT

Several of us went out with them on horseback to round up a lion for them. We traveled three or four hours—half a dozen horsemen and 30 or 40 stalwart naked savages with ox-hide shields and spears. Then we roused a big lion with a fine mane, and, after running a mile or two, rounded him up under a bush, and the spearmen came trotting up. It was as fine a sight as I ever saw. The first spearman that came up halted about 60 yards from the lion. (We were watching him with our rifles to see that he did not attack the first spearman.) Then this man knelt down with his ox-hide shield in front of him, looking over the shield at the lion; and, as man after man came up, they formed a ring around the lion, all kneeling. The lion stood under the bush. As they closed in on him he began to grow more and more angry, roaring, and looking first to one side and then to the other and lashing his tail furiously. It was a fine sight to see these men make the ring, with their spears and their eager, intent faces, and the great, murderous, man-eating beast in the middle, ever growing more and more angry. As soon as the ring was completed they all got up and started to close in. The lion charged straight for the weakest part of the ring. The man in front braced himself; we could see his muscles all stand out as if he were a bronze statue. There were five or six men who took part in the fight. From each side the two or three nearest men sprang in to see if they could not get the lion as he came straight on toward the man in his immediate front. When he was about not more than six feet from him the man lobbed the spear; that is, he did not take his arm back and throw it, but simply cast it loose with a little motion of the

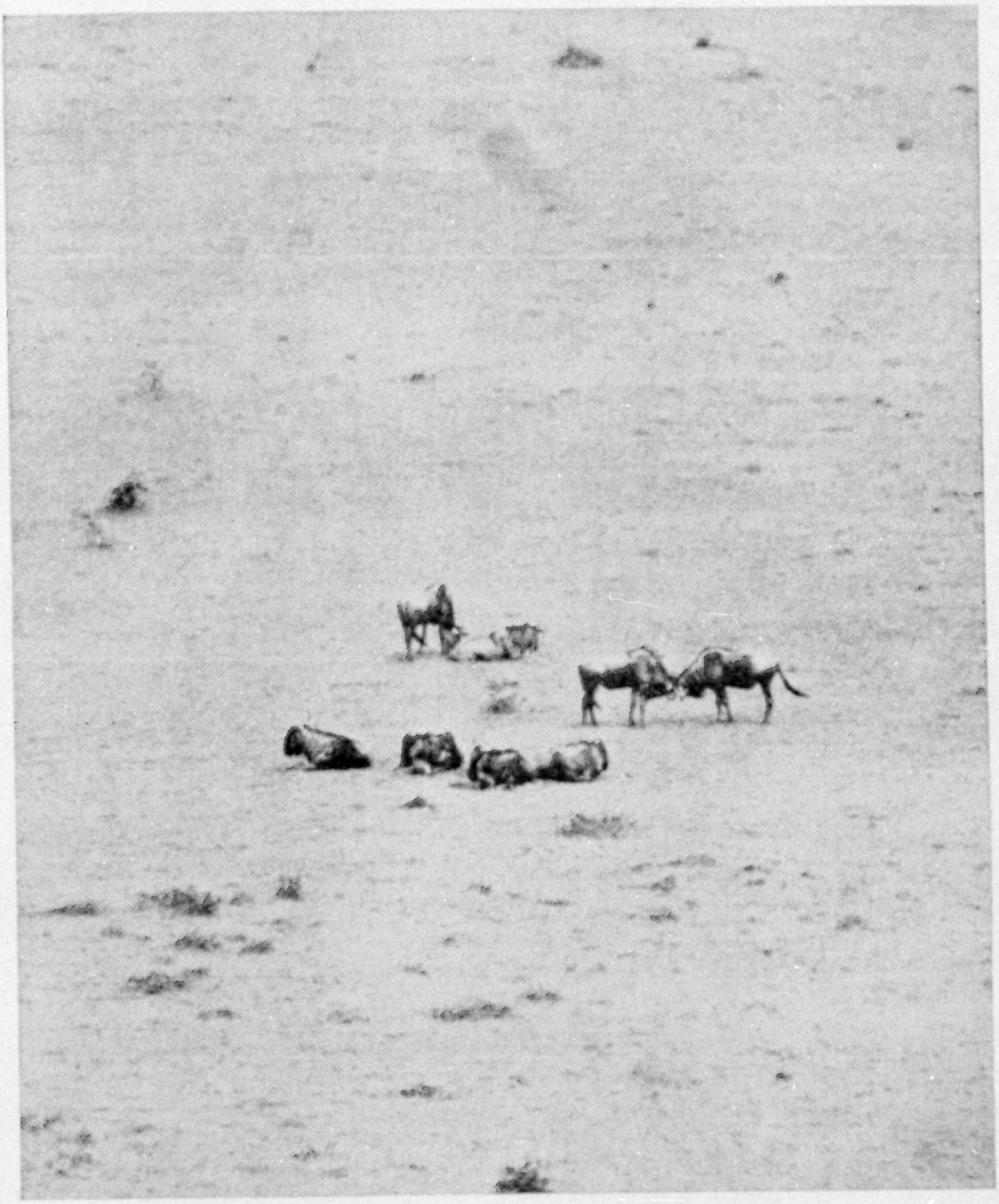


Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

WILDEBEEST AT HOME

wrist and trusted to the weight of the spear to go in.

As the lion came forward the spear struck him on the left shoulder, and came out diagonally through him in front of his right hip. The lion reared like a rearing horse and bore the shield down, burying his teeth and claws in the man. At the same moment another man leaped in on one side and threw his spear; the spear-head glimmered like white fire in the sunlight, and, entering transversely, came out through the lion on the hither side. The lion turned on

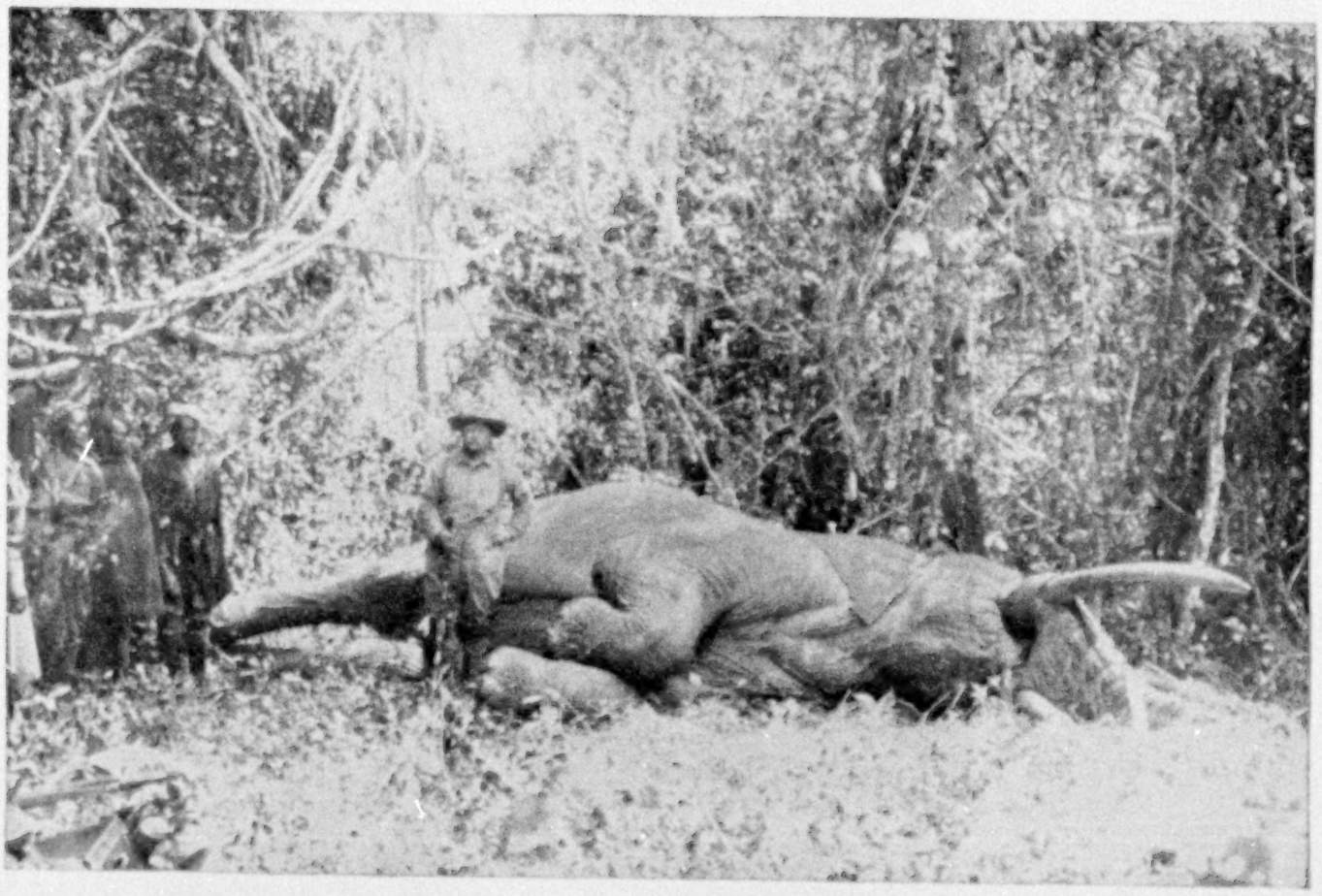


Photo by Cuninghame. Copyright by Charles Scribner's Sons

THE FIRST BULL ELEPHANT

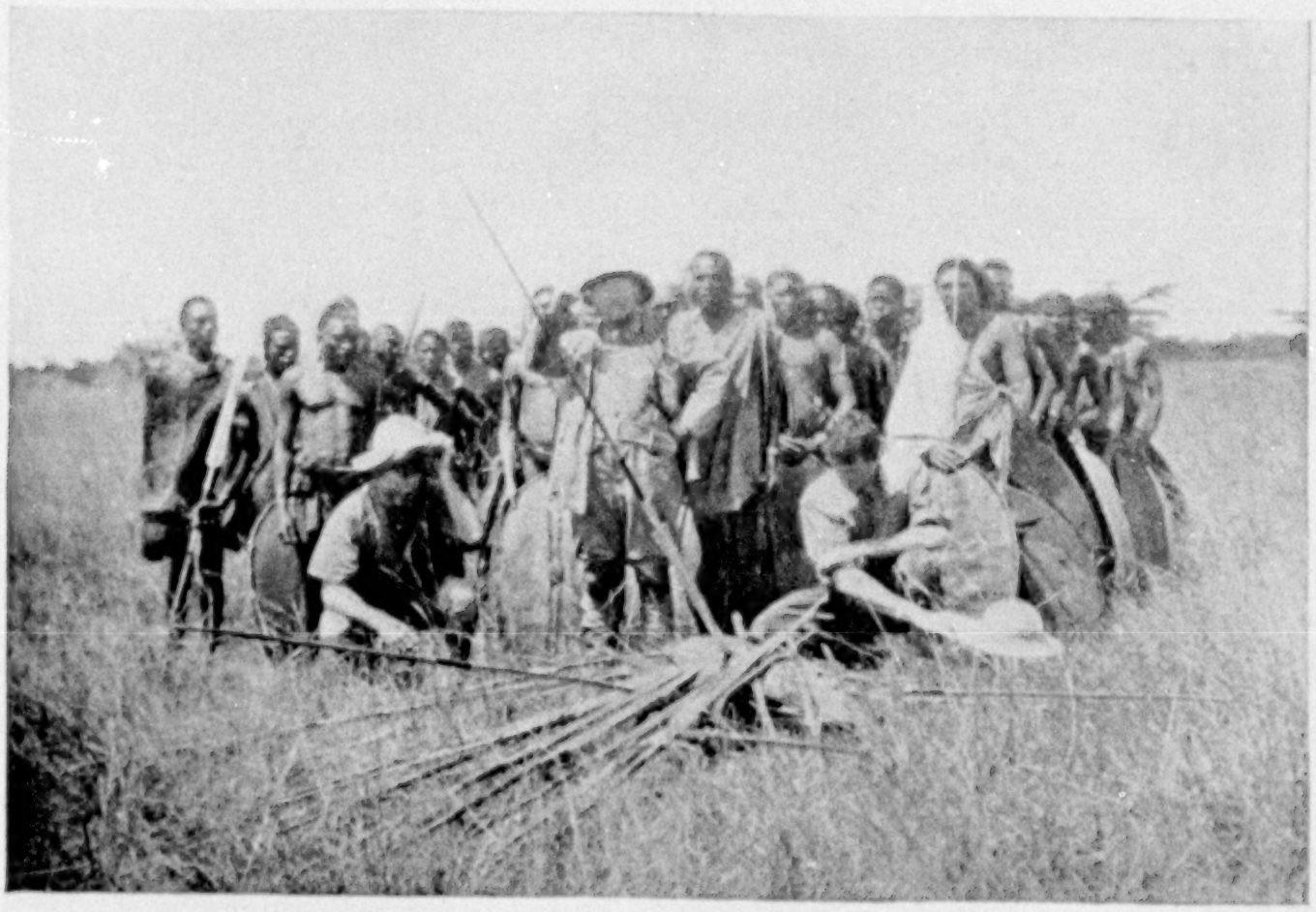


Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

AFTER THE LION SPEARING

Photo by Kermit Roosevelt. Copyright by Charles Scribner's Sons

ARAB SHEIKS THAT CAME IN FROM THE DESERTS: KHARTUM

that man, but could not bite him, only clawing him a little. Another spear struck the lion, and he went down; he took one spear in his mouth and bit it, twisting it so that it looked like a horseshoe; the next moment the men were on him and it was all over. I do not suppose the thing lasted ten seconds, but it was as remarkable a spectacle for those ten seconds as any human being could wish to see. I had one funny after-experience in connection with it. The two men were pretty well mauled, and when we were putting disinfectant into the wounds it hurt them a little, and I thought it would cheer them up to tell them, through the interpreter, that I would give each of them a heifer. It cheered up those two all right, but all the other men were very angry! They thought that these men had got their share of honors already, and that it was a most unjustifiable thing for me to give them heifers in addition.

I have never passed a more interesting eleven months than I passed in Africa. From the standpoint of the man interested in geography, in geology, in natural history, in ethnology, I do not know how any one could put in his time to a greater advantage than in a trip of that nature. I am more than glad that I was able to take it in a manner worth taking, because the Smithsonian Institution sent me out as the head of a scientific expedition. I think I can say that we did our work in such a manner as not to cast discredit upon the American nation, and I am extremely pleased that I should have had the chance to make my first speech on the subject under the auspices of this Society this evening.

THE POPULATION OF THE UNITED STATES

By Henry Gannett

THE population of the United States as announced by the Bureau of the Census was, on April 15, 1910, 93,402,151. This figure includes not only continental United States, but its detached territories—Alaska, Hawaii, and Porto Rico. Excluding these territories, continental United States contained 91,972,266 inhabitants; or, in round numbers, 92,000,000, a number much larger than was generally anticipated.

Compared with the population of the same area in 1900, 75,994,575, our numbers increased in 10 years not less than 15,977,691, or at the rate of 21.0 per cent. The per cent of increase was slightly greater than in the preceding decade, 1890 to 1900, when it was 20.7 per cent.

It is probable that our natural increase has diminished considerably, but the net immigration—*i. e.*, the excess of arrivals over departures — has been decidedly greater, more than offsetting this decrease in the natural increase.

In the matter of numbers, this country of ours is the fourth on earth, being exceeded only by China, India, and Russia, all of them much lower in the scale of civilization than ourselves. Measured by efficiency, our 93 millions produce in the world's goods many times that produced by China's 420 millions, India's 300 millions, or Russia's 161 millions. The number of inhabitants exceeds those of the United Kingdom and France combined.

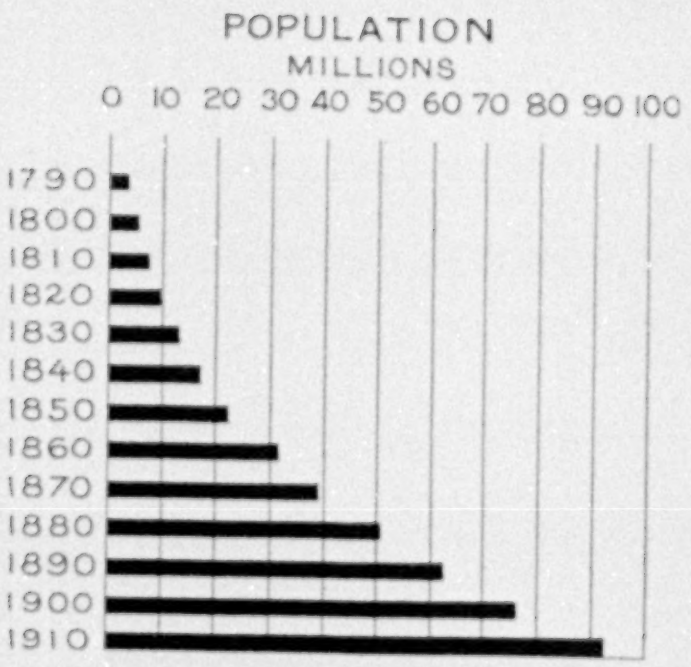
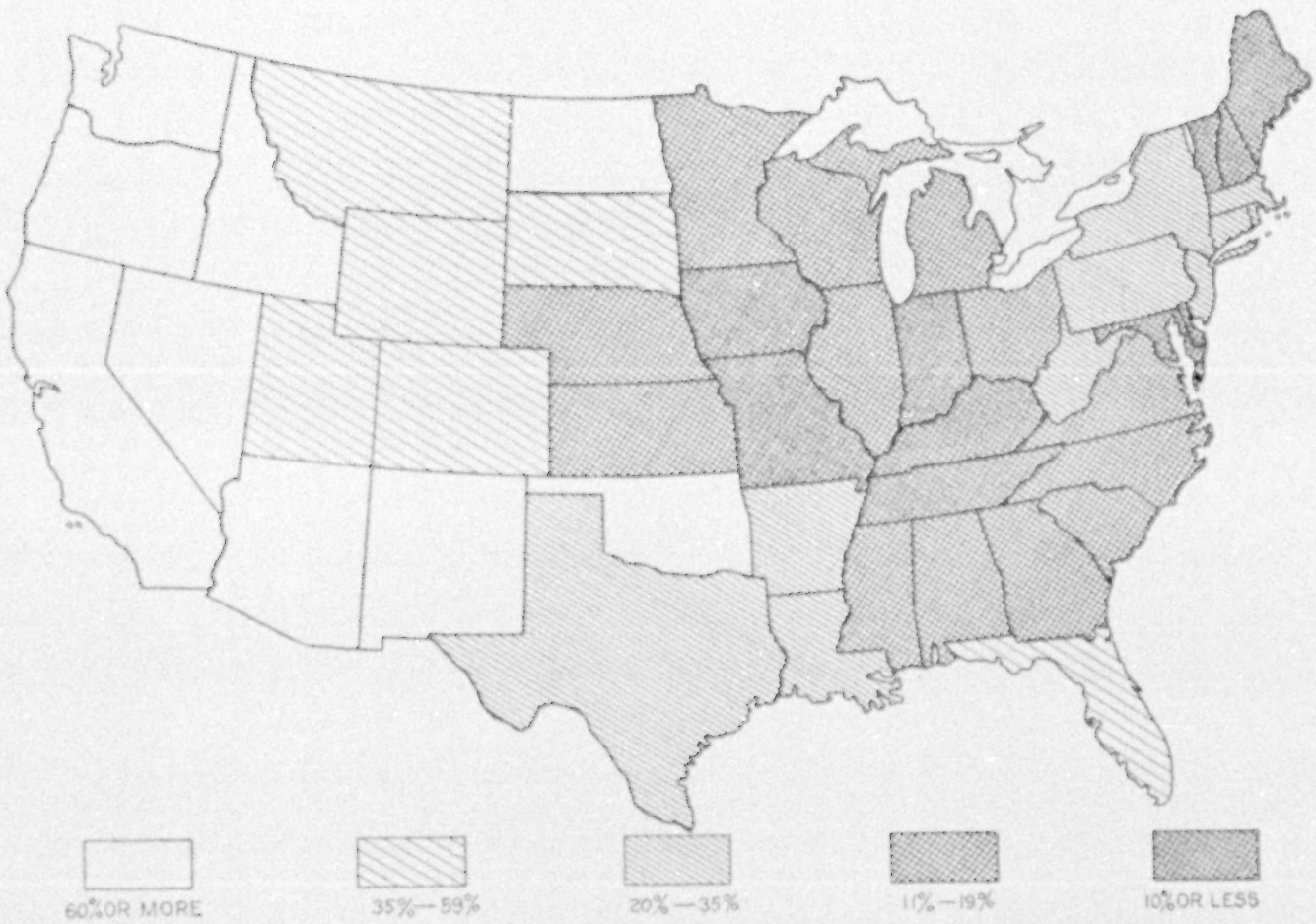


DIAGRAM SHOWING OUR POPULATION AT EACH CENSUS PERIOD

The decade 1890 to 1900 was one of depression in business, which showed itself in many ways, but perhaps most markedly in the decrease of immigration and increase in the number of returning immigrants, the result of which was to actually reduce the number of foreign born. This depression in business was felt more severely in the West than elsewhere, for to other causes was added the reduction in the price of silver and the consequent closing down of many mines of that metal.

In the decade just closed all this was changed The times have been prosperous; immigrants have flocked to our shores in unprecedented numbers; the mines of the West have been reopened and are working full-handed; the farmers have produced full crops, and have realized high prices for them.

The first census was taken in 1790, and showed a population of a little less than four millions, spread along the Atlantic seaboard from Maine to Georgia. In this census little was done except to count noses. Every tenth year thereafter a census has been taken, and with each succeeding census the scope and variety and the value of the statistics have increased. At present the taking of a census is a very serious task. The population alone has multiplied nearly 25 times. The information which is obtained concerning the population is vastly greater than in the earlier censuses; and, moreover, we have for the past 60 years taken also a census of our industries and



MAP SHOWING THE RATE OF GROWTH THROUGHOUT THE UNITED STATES: 1900-1910

products, and one constantly increasing in complexity and value.

The cost of the first census was trifling; that of the thirteenth will probably be in the neighborhood of $14,000,000. In census-taking and in the presentation of its results the United States easily leads the world.

The following table shows the population at each census, the per cent of increase from census to census, and the density of population; *i. e.*, the average number of inhabitants to a square mile. These facts are shown graphically by the diagrams accompanying this article.

Population of Continental United States

Year.	Population.	Per cent of increase.	Density.
1790.....	3,929,214	....	4.9
1800.....	5,308,483	35.1	6.6
1810.....	7,239,881	36.4	3.7
1820.....	9,638,453	33.1	4.8
1830.....	12,866,020	33.5	6.4
1840.....	17,069,453	32.7	8.4
1850.....	23,191,876	35.9	7.9
1860.....	31,443,321	35.6	10.8
1870.....	38,558,371	22.6	13.3
1880.....	50,155,783	30.1	17.3
1890.....	62,622,250	24.9	21.2
1900.....	75,994,575	20.7	25.6
1910.....	91,972,266	21.0	30.7

The rates of increase, starting with 35.1 per cent in the earliest decade, diminished slowly during the first half century. Then, between 1840 and 1850 immigration increased with a rush, owing to famines in Ireland and political troubles in Germany, and the rate of increase suddenly rose. Since then it has declined greatly, as the country has filled up with people.

NO COUNTRY HAS GROWN SO RAPIDLY AS OURS

The growth of this country for the past 120 years has been most astounding. There is no record of any such growth in any other country. Though our growth has in the past 20 years slowed down greatly, yet it is at present much more rapid than that of any European country.

Australia and Canada have been under much the same conditions during the past century as the United States, and their relatively slow growth is difficult to explain. Moreover, while we can understand why half the population of Ireland has come to the United States, it is not easy to explain why a million and a quarter of British citizens have left their

home for this country. One would suppose that if they wished to leave old England they would have gone to Canada or Australia. The case becomes still more difficult when we learn that there are about an equal number of Canadians in this country, two-thirds of whom are of English extraction.

The average number of people to a square mile, or the density of population, has been affected not only by our total number of inhabitants, but by the area of the country. In 1802 the great province of Louisiana was added to our original territory; in 1819, the Floridas; between 1840 and 1850, Texas and most of the southwestern States, and in 1852 the Gadsden purchase. As the population here treated is that of continental United States only, the addition of Alaska, Hawaii, and Porto Rico are not here considered, either as to population or area. In spite of all these additions, which have nearly quadrupled the original size of the country, the density of its population is now more than six times as great as 120 years ago.

The following table gives by States and Territories the population in 1910, the per cent of increase from 1900 to 1910, the density of population in 1910, and, in the last column, the proportion which the number of inhabitants of cities of 25,000 or more bears to the population of the State. The States are arranged in geographic instead of alphabetic order, so that those having similar characteristics may be placed near one another.

Population, Rate of Increase 1900–1910, Density of Population, and Per Cent of Increase of States.

	Population, 1910.	Per cent of increase.	Density.	Per cent urban.
Maine	742,371	7	25	11
N. Hampsh'e	430,572	5	48	22
Vermont	355,956	4	39	0
Mass.	3,366,416	20	420	64
Rhode Island	542,610	27	517	68
Connecticut	1,114,756	23	230	45
New York	9,113,614	25	191	69
New Jersey	2,637,167	35	337	52
Pennsylvania	7,665,111	22	170	39
Delaware	202,322	10	103	43
Maryland	1,295,346	9	131	43
Dist. of Col.	331,069	19	...	100
Virginia	2,061,612	11	51	14
West Va.	1,221,119	27	50	6
N. Carolina	2,206,287	17	45	3
S. Carolina	1,515,400	13	52	6
Georgia	2,609,121	18	44	12
Florida	752,619	42	14	13
Alabama	2,138,093	17	43	10
Mississippi	1,797,114	16	39	0
Louisiana	1,656,388	20	36	22
Texas	3,896,542	28	15	12
Arkansas	1,574,449	20	30	3
Oklahoma	1,657,155	110	24	6
Tennessee	2,184,789	8	52	15
Kentucky	2,289,905	7	57	15
Ohio	4,767,121	15	117	37
Indiana	2,700,876	7	75	18
Illinois	5,638,591	17	101	46
Michigan	2,810,173	16	49	30
Wisconsin	2,333,860	13	43	25
Minnesota	2,075,708	19	26	30
Iowa	2,224,771	0	40	15
Missouri	3,293,335	6	48	33
N. Dakota	577,056	81	8	0
S. Dakota	583,888	45	8	0
Nebraska	1,192,214	12	15	16
Kansas	1,690,949	15	21	11
Montana	376,053	55	3	10
Wyoming	145,965	58	1	0
Colorado	799,024	48	8	36
N. Mexico	327,301	68	3	0
Arizona	204,354	66	2	0
Utah	373,351	35	5	32
Idaho	325,594	101	4	0
Nevada	81,875	93	1	0
California	2,377,549	60	15	45
Oregon	672,765	63	7	31
Washington	1,141,990	120	17	37
Alaska	64,356			
Hawaii	191,909			
Porto Rico	1,118,012			
Military and Naval	55,608			

THE STATES THAT HAVE INCREASED MOST RAPIDLY

New York is, as it has been continuously for 90 years, the most populous of all the States, having now more than 9,000,000 inhabitants. This is more than double the population of the entire country in 1790, and very nearly equal to its population 30 years later, in 1820.

Our second State in population is Pennsylvania, which has held that position since 1830. Then follow in order Illinois and Ohio, which held the same positions in 1900. Going on down the

list, changes in rank occur, and in some cases these changes are great. Thus, California jumps from twenty-first to twelfth place.

Twelve States hold the same rank in 1910 as in 1900; all the others have changed places, the sum of the changes being 90, or an average of nearly two places to each State. The changes in rank which occurred between 1890 and 1900 numbered 65 only, illustrating the fact that the increase in population of the different States have differed much more widely in the last decade than in the previous one. The range among these increases was from Nebraska, which suffered a slight loss, up to Washington, Oklahoma, and Idaho, which more than doubled their numbers.

The map on page 35 shows the distribution of the rates of increase by States. Of the Atlantic States, the great manufacturing States of Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania, with the mining State of West Virginia and the frontier and winter-resort State of Florida, increased at rates more rapid than did the entire country. Massachusetts, however, very nearly reached it. Of the central States, only the frontier States of North Dakota, South Dakota, Oklahoma, and Texas increased more rapidly than the country at large, while all the western States increased more rapidly.

In the central part of the country there is an area which has grown very slowly, less than 10 per cent, while Iowa, which is within this area, has actually lost a few thousand inhabitants. Illinois, although in the midst of this area, was saved from finding itself in the same class as its neighbors only by the fact that it contains the great city of Chicago, with its rapid growth. These States, from Indiana west to the Mississippi River, are at present quite fully populated for agricultural States. They offer little inducement to immigrant farmers to come or to the sons of farmers to remain. In short, they have nearly reached the limit of a farming population. Other industries which will permit

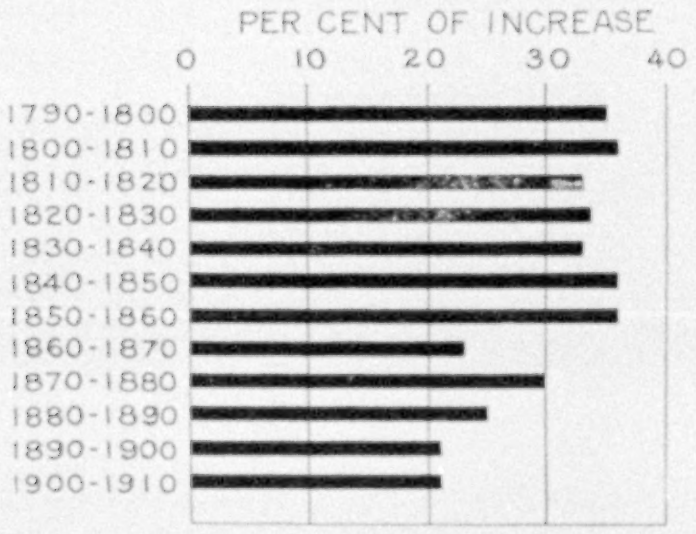


DIAGRAM TO ILLUSTRATE OUR RATE OF GROWTH BY DECADES

and require a greater density of population, such as manufactures and commerce, must be introduced before a more rapid growth can be resumed.

This illustrates one of several phases in the peopling of a country. The first settlement represents commonly the pastoral interests, which require large areas of land to support few persons. Later, perhaps when railroads have made the region accessible, farmers will enter it and take possession, perhaps slowly and gradually, or perhaps with a rush, as illustrated by their recent invasion of Oklahoma. Then comes the condition typified by the central States, where a farming community has reached its maximum, or nearly so. Following that commonly comes the development of manufactures and the attendant building of cities, which attract people and cause a more rapid growth.

Twenty or thirty years ago Ohio was in much the condition in which Iowa is today. Since then the development of her cities has sent her forward again.

The rapid growth of southern New England and of the other North Atlantic States is due almost entirely to their cities. The agricultural element is almost at a standstill there. The growth of the cotton States, ranging from 14 to 20 per cent, is the normal growth of agricultural communities not yet nearing the maximum density for that industry. Texas,

XUM

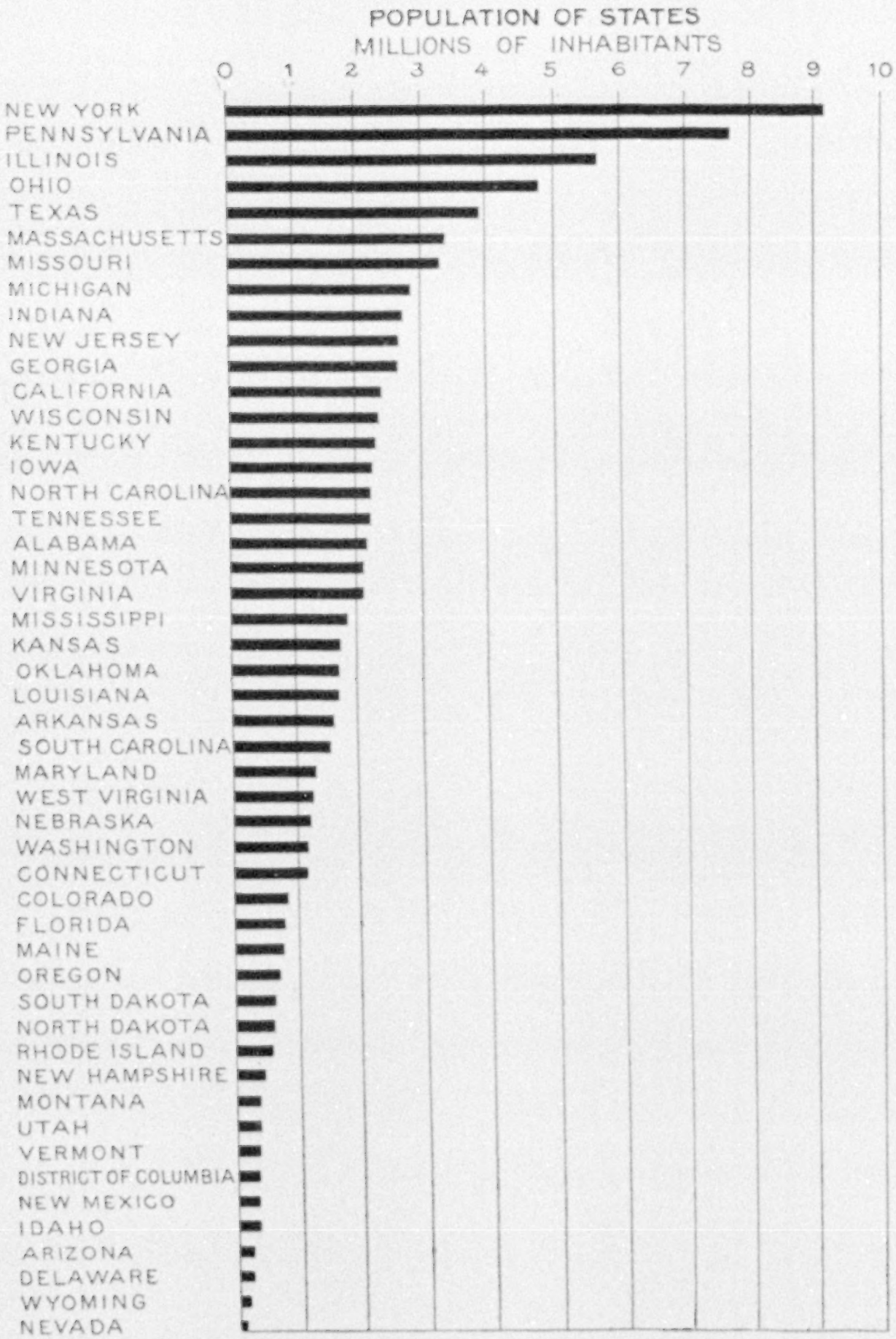


DIAGRAM COMPARING THE POPULATION OF THE VARIOUS STATES

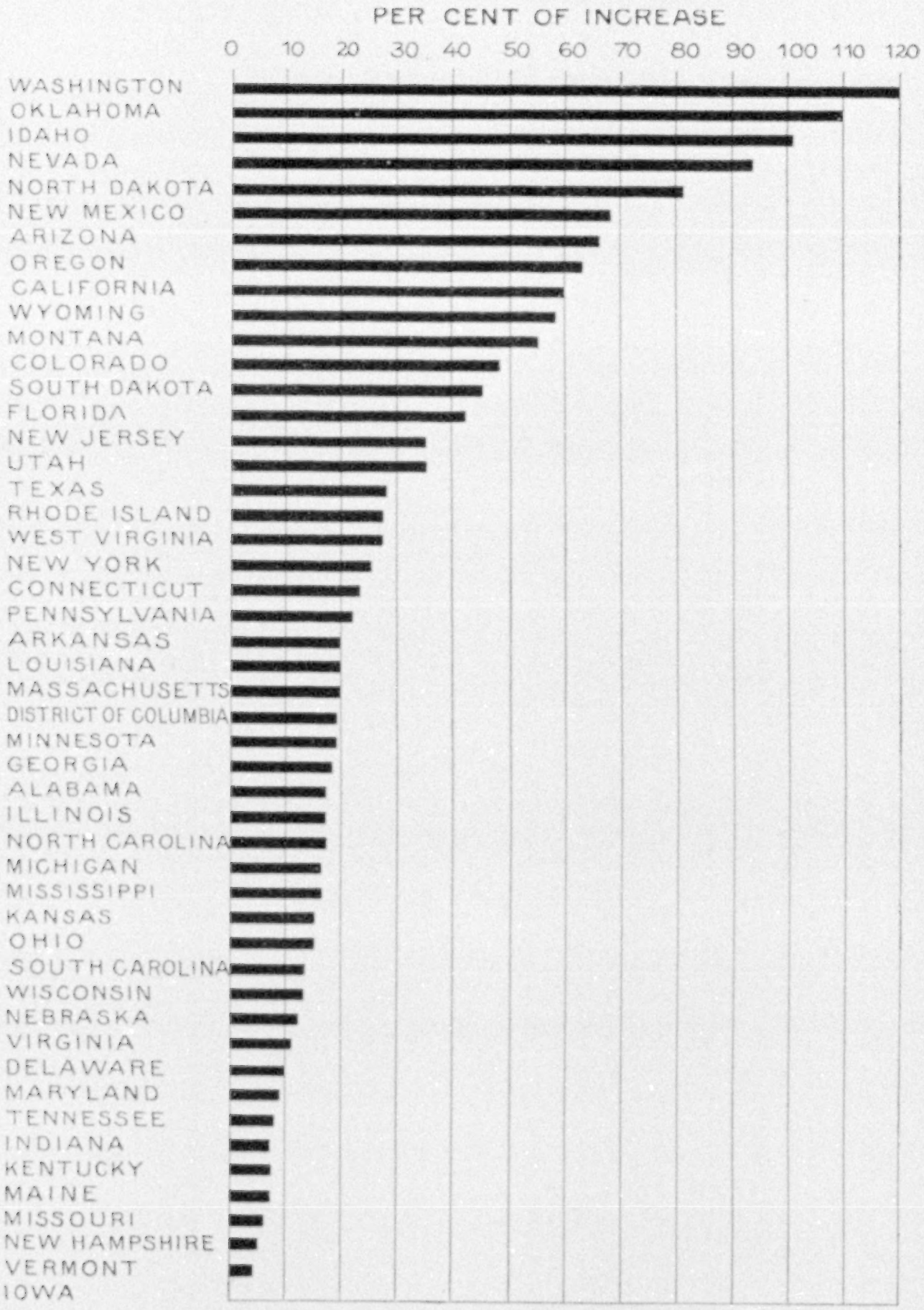


DIAGRAM TO SHOW THE RATE OF GROWTH OF THE STATES

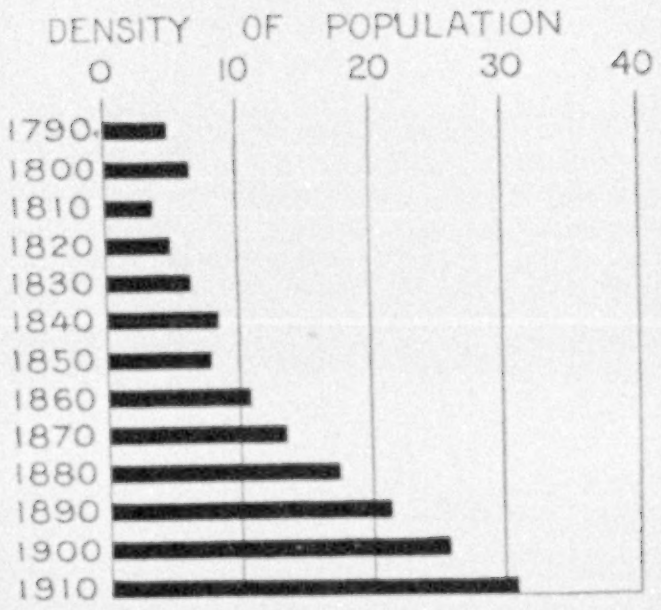


DIAGRAM SHOWING THE NUMBER OF INHABITANTS PER SQUARE MILE AT EACH CENSUS PERIOD

the Dakotas, and the entire West are filling up their waste places, while in many places, as in Nevada, mining is playing a part.

REMARKABLE GROWTH OF PACIFIC COAST STATES

The most phenomenal growth has taken place on the Pacific coast. The three States bordering the western ocean show the following percentages of increase: California, 60.1; Oregon, 62.7, and Washington, 120.4. These three States together contributed 1,775,612 to the increase of the country, or 11 per cent of the total amount. Their contribution was nearly as great as that of the empire State of New York, and far larger than that of any other State. The increase in these States consisted mainly in the growth of cities and in filling up the well-watered regions near the coast.

OUR DENSITY OF POPULATION COMPARED TO THAT OF EUROPEAN COUNTRIES

In density of population the States show the widest sort of variations, ranging from 517 inhabitants to a square mile in Rhode Island, 420 in Massachusetts, and 337 in New Jersey, down to less than 1 to a square mile in Nevada. The most densely populated countries of Europe are Belgium, with 587, and Netherlands, with 408.

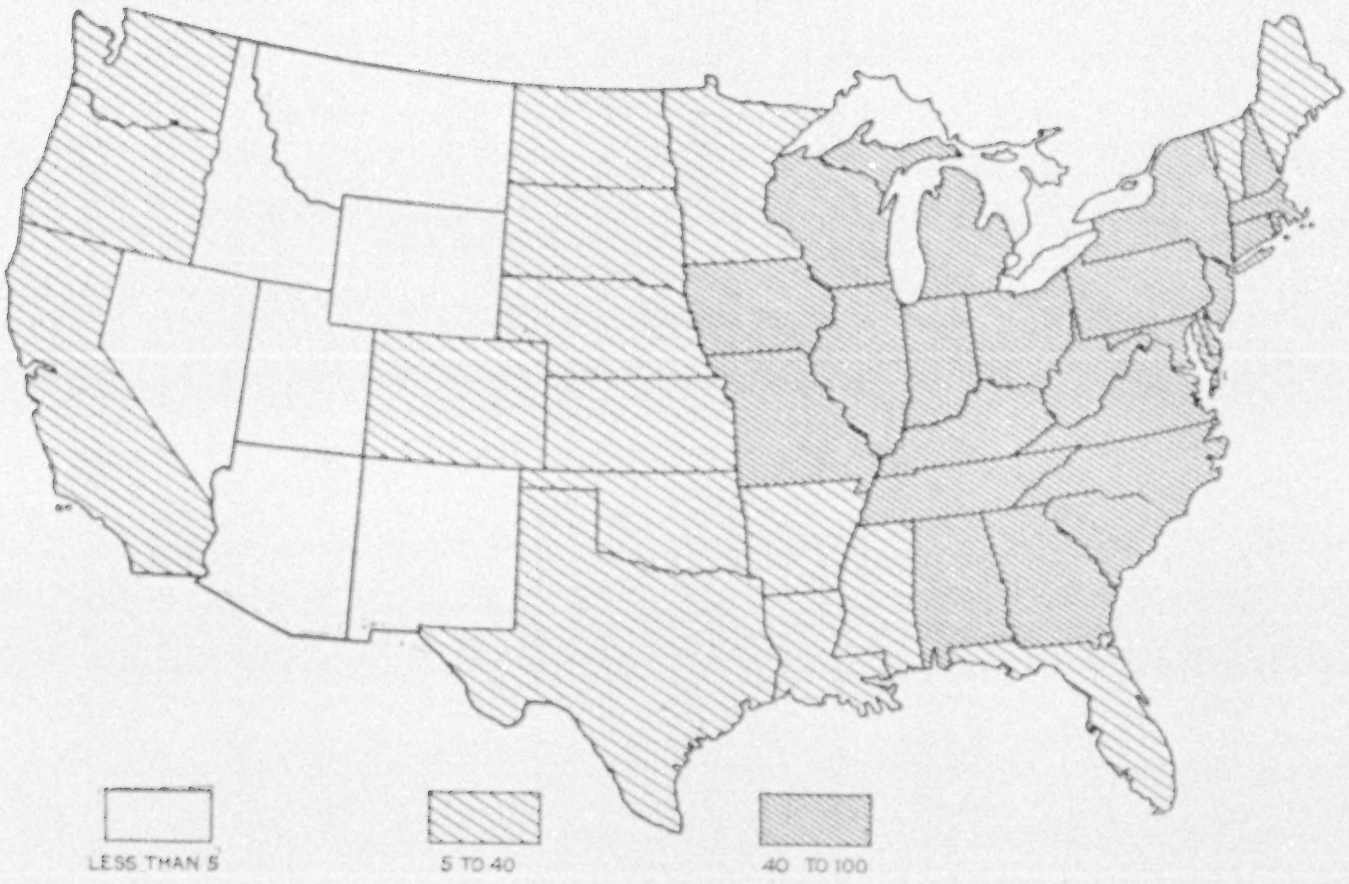
The great manufacturing States of the Northeast have an average density of more than 200 to a square mile. The agricultural States south of the Potomac and Ohio have about 40 to a square mile, the density decreasing southward and westward. Those of the upper Mississippi Valley east of the great plains are equally well populated.

The plains States—the Dakotas, Nebraska, Kansas, and Oklahoma—still have great vacant spaces to be filled, as they support now on an average not over 15 to a square mile.

In all the mountain States the population is sparse, ranging from less than 1 inhabitant to a square mile in Nevada up to 8 in Colorado. The three Pacific States are much more fully populated, but there is still room for two or three times as many people before the agricultural limit will be reached.

In running down these columns of figures, it is interesting to note that, in the agricultural States, as the density of population increases the rate of increase diminishes. Consider, for instance, the Carolinas, Georgia, and Florida. South Carolina, with the greatest density, has the lowest rate, North Carolina next, then Georgia, while Florida, with much the lowest density, has far the highest rate. Kentucky and Tennessee show the same phenomena. Indeed, as a general statement, it applies to all the agricultural States.

The increase of population was largely in the cities, and not alone in those of 100,000 or more inhabitants, but perhaps in equal measure in smaller ones. The total population in cities of 25,000 or more inhabitants was 28,508,007, leaving 63,464,259 in smaller towns and in rural communities. In 1900 the corresponding figures were 21,078,189 and 54,916,386. The cities grew at the rate of 35 per cent, while the smaller places and the rural districts increased at the rate of only 15.5 per cent. In 1900 these cities



OUTLINE MAP TO SHOW THE DENSITY OF POPULATION OF THE UNITED STATES: THE NUMBER OF INHABITANTS PER SQUARE MILE

contained 28 per cent of the total population, while in 1910 they contained not less than 31 per cent. Of the total increase in population, 46 per cent was in these cities and 54 per cent in the remainder of the country.

THE MANUFACTURING STATES

In a general way we may, on the basis of the last column of the table on page 36, classify the States as urban and rural, or by their prevailing industries, as manufacturing and commercial on the one hand and agricultural on the other. The criterion is not a perfect one, as the minimum of city population, 25,000, is too high. If urban centers down to 2,500 inhabitants were included, the results might, in certain cases, be different. Moreover, in measuring the ruling industry of a State by the relative magnitude of its city population, we find in several cases that a single city induces the result. Thus, Illinois as a whole is a manufacturing State; *i. e.*, nearly half its people are in cities, engaged in those avocations carried on only in such communities; but, outside of Chicago, Illinois is distinctly a farming community. The same is the case in Maryland outside of Baltimore, and Delaware outside of Wilmington.

Drawing the line at a little below 40 per cent of urban population, so as to include Pennsylvania and Ohio, both well known as predominantly manufacturing States, we may make the following classifications:

Manufacturing and Commercial States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Ohio, Illinois, California, Washington.

Agricultural States: Maine, New Hampshire, Vermont, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, Oklahoma, Tennessee, Kentucky, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota,

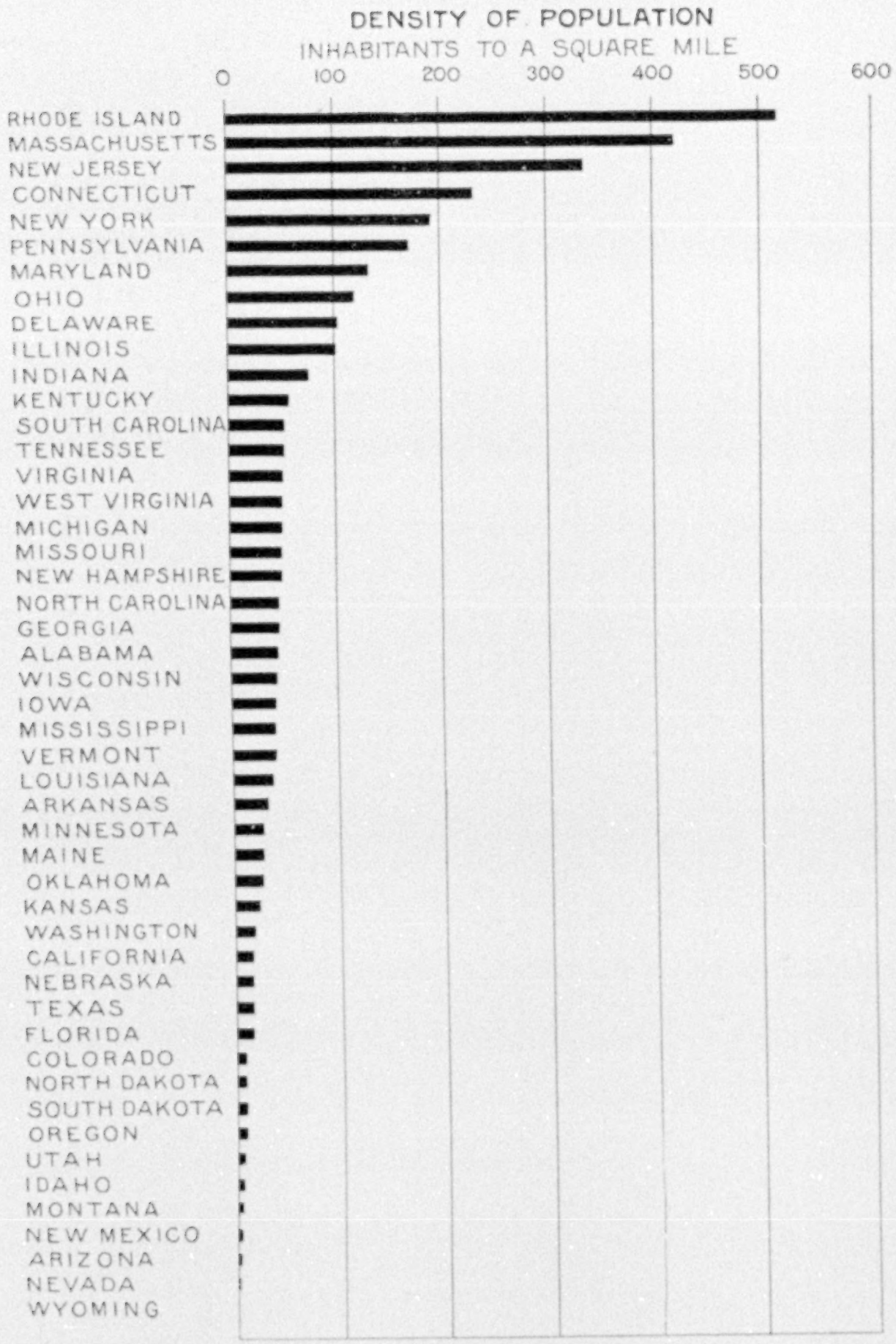
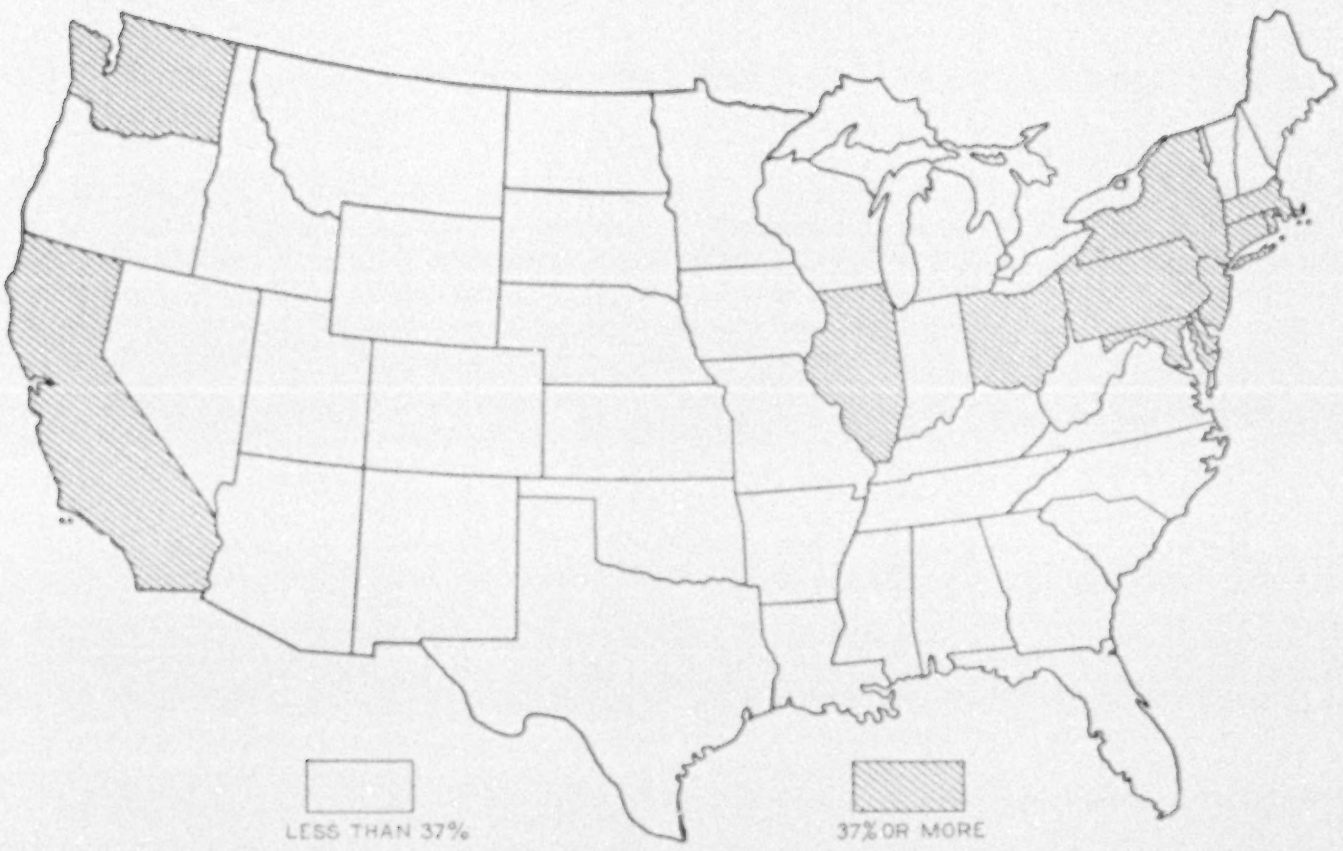


DIAGRAM TO SHOW THE DENSITY OF POPULATION OF THE VARIOUS STATES



MAP SHOWING THE PROPORTION OF URBAN TO TOTAL POPULATION

Nebraska, Kansas, Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Idaho, Nevada, Oregon.

It will be noted that all the States south of the Potomac and Ohio rivers, without exception, are agricultural, and that those of the upper Mississippi Valley, with the exception of Illinois and Ohio, are of similar character; that the North Atlantic States, excepting Maine, New Hampshire, and Vermont, are manufacturing and commercial, and that the western States, excepting California and Washington, are predominantly agricultural.

OUR CITIES HAVE GROWN MUCH MORE RAPIDLY THAN THE COUNTRY

The distribution of the urban element is very irregular. One-half of the dwellers in cities of 25,000 or more inhabitants were in the North Atlantic States, while in the northern States—*i. e.*, those north of Mason and Dixon line, the Ohio River and the southern boundary of Missouri and Kansas—were not less than four-fifths. In the western States were 8 per cent, while in all the southern States there were only 12 per cent.

In every State the urban element, defining it as above, has grown more rapidly than has the rural element, or the remainder of the population, in a number of cases many times as rapidly. Thus, in New York, while its cities have increased 42 per cent, the rural element has grown only 2 per cent; in Massachusetts the corresponding proportions are 32 per cent and 4 per cent, and in Ohio 48 per cent and 1 per cent. The cities have shown a very rapid growth, ranging from 141 per cent in Oregon and 140 per cent in Washington, down to 13 per cent in Kentucky and 14 per cent in Delaware and Maryland.

In four States, viz., New Hampshire, Rhode Island, Iowa, and Missouri, the rural population shows a decrease, while in Maine, New York, North Carolina, Michigan, and Ohio the gain of this element of the population has been trifling.

In 1900 there were 38 cities having 100,000 or more inhabitants each. During the decade following, this number was diminished by two — Allegheny, Pennsylvania, was annexed to Pittsburg, and Saint Joseph, Missouri, apparently lost a large number of inhabitants, leav-

ing it fewer than 100,000 in 1910. During the decade 14 other cities passed the 100,000 mark, making 50 such cities in 1910.

The following table gives the population and rate of increase of these cities:

Cities of 100,000 or More.

City.	Population.	Per cent of increase.
New York, N. Y.	4,766,883	39
Chicago, Ill.	2,185,283	29
Philadelphia, Pa.	1,549,008	20
St. Louis, Mo.	687,029	19
Boston, Mass.	670,585	20
Cleveland, Ohio.	560,663	47
Baltimore, Md.	558,485	10
Pittsburg, Pa.	533,905	18
Detroit, Mich.	465,766	63
Buffalo, N. Y.	423,715	20
San Francisco, Cal.	416,912	22
Milwaukee, Wis.	373,857	31
Cincinnati, Ohio.	364,463	12
Newark, N. J.	347,469	41
New Orleans, La.	339,075	18
Washington, D. C.	331,069	19
Los Angeles, Cal.	319,198	212
Minneapolis, Minn.	301,408	49
Jersey City, N. J.	267,779	30
Kansas City, Mo.	248,381	52
Seattle, Wash.	237,194	194
Indianapolis, Ind.	233,650	38
Providence, R. I.	224,326	28
Louisville, Ky.	223,928	9
Rochester, N. Y.	218,149	34
St. Paul, Minn.	214,744	32
Denver, Colo.	213,381	59
Portland, Oreg.	207,214	129
Columbus, Ohio.	181,548	45
Toledo, Ohio.	168,497	28
Atlanta, Ga.	154,839	72
Oakland, Cal.	150,174	124
Worcester, Mass.	145,986	23
Syracuse, N. Y.	137,249	27
New Haven, Conn.	133,605	24
Birmingham, Ala.	132,685	245
Memphis, Tenn.	131,105	28
Scranton, Pa.	129,867	27
Richmond, Va.	127,628	50
Paterson, N. J.	125,600	19
Omaha, Neb.	124,006	21
Fall River, Mass.	119,295	14
Dayton, Ohio.	116,577	37
Grand Rapids, Mich.	112,571	29
Nashville, Tenn.	110,364	37
Lowell, Mass.	106,294	12
Cambridge, Mass.	104,839	14
Spokane, Wash.	104,402	183
Bridgeport, Conn.	102,054	44
Albany, N. Y.	100,253	7

OUR GREATEST CITIES

New York, our greatest city, has had a phenomenal growth for a great body of people. It has increased by nearly two-fifths of its population in 1900. Its increase was greater than in the decade preceding, caused, no doubt, by the greatly increased immigration in the last decade, a large proportion of which has remained in the city where it landed. In the past ten years it has added nearly one and one-third millions.

Its additions alone very nearly equal the combined total population of St. Louis and Boston, respectively the fourth and fifth cities of the country in numbers. The increase of New York equals that of Chicago, Philadelphia, St. Louis, Boston, Cleveland, and Detroit. Its population is a million greater than the combined population of Chicago and Philadelphia, the next largest cities. It contains more than half the population of New York State.

New York is exceeded in number of inhabitants by London only. As is well known, London is not a city, as the word is understood in this country. It is not a community with well-defined limits, under a single municipal government, but an elastic group of boroughs, some of which are united for one municipal function, others for another; thus, there is a group of boroughs combined to provide themselves with a common water supply, another group for police purposes, etc. The largest of these groups, the County of London, had in 1909 a population of 7,429,740, or half as many again as New York.

The third city in size, Paris, is less than three-fifths the size of New York, and the fourth city, Tokyo, is less than half as large. New York is larger than Berlin and Vienna together.

Our second city, Chicago, grew by no means as rapidly in the last decade as in that preceding, nor did it grow as rapidly as New York in the last decade. Still it added nearly 400,000 inhabitants. Philadelphia, which in recent times has been rather slow in growth, added only one-fifth to its numbers. St. Louis and Boston grew at about the same rate. Cleveland showed a phenomenal growth, slightly exceeding its rate for the decade 1890-1900, and raising it from seventh to

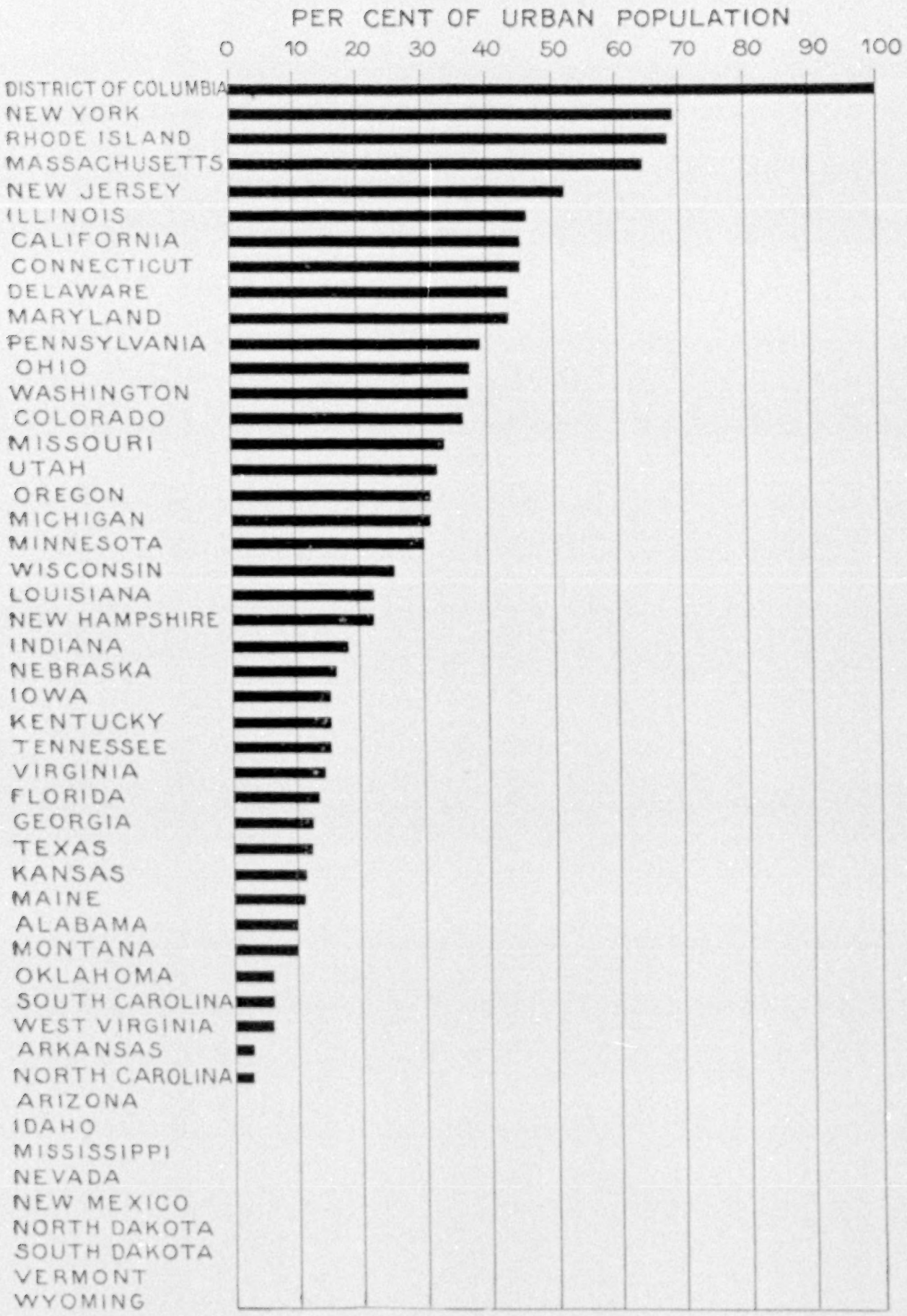


DIAGRAM TO SHOW THE PROPORTION OF THE POPULATION LIVING IN CITIES

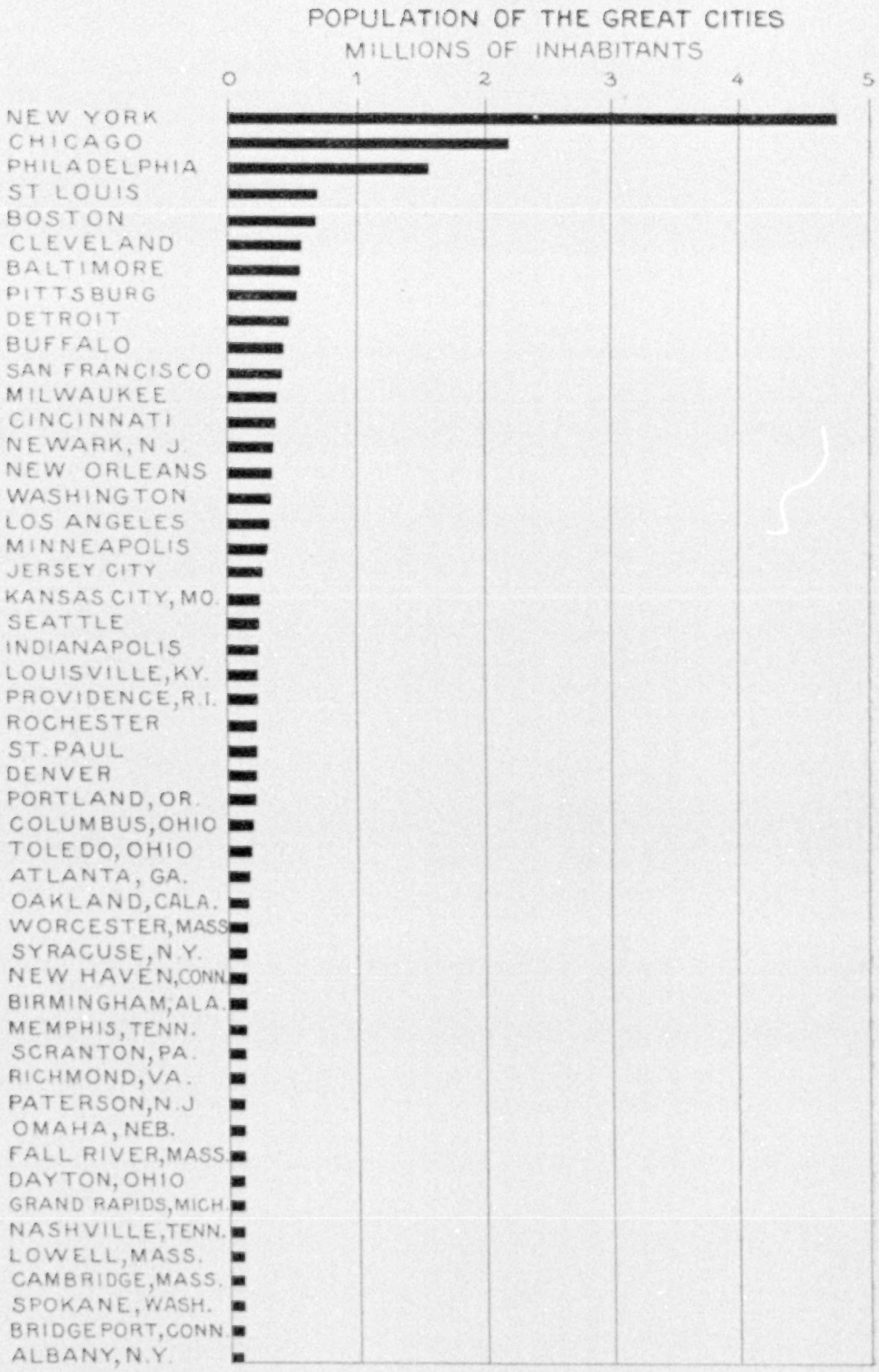


DIAGRAM COMPARING THE SIZE OF OUR GREATER CITIES

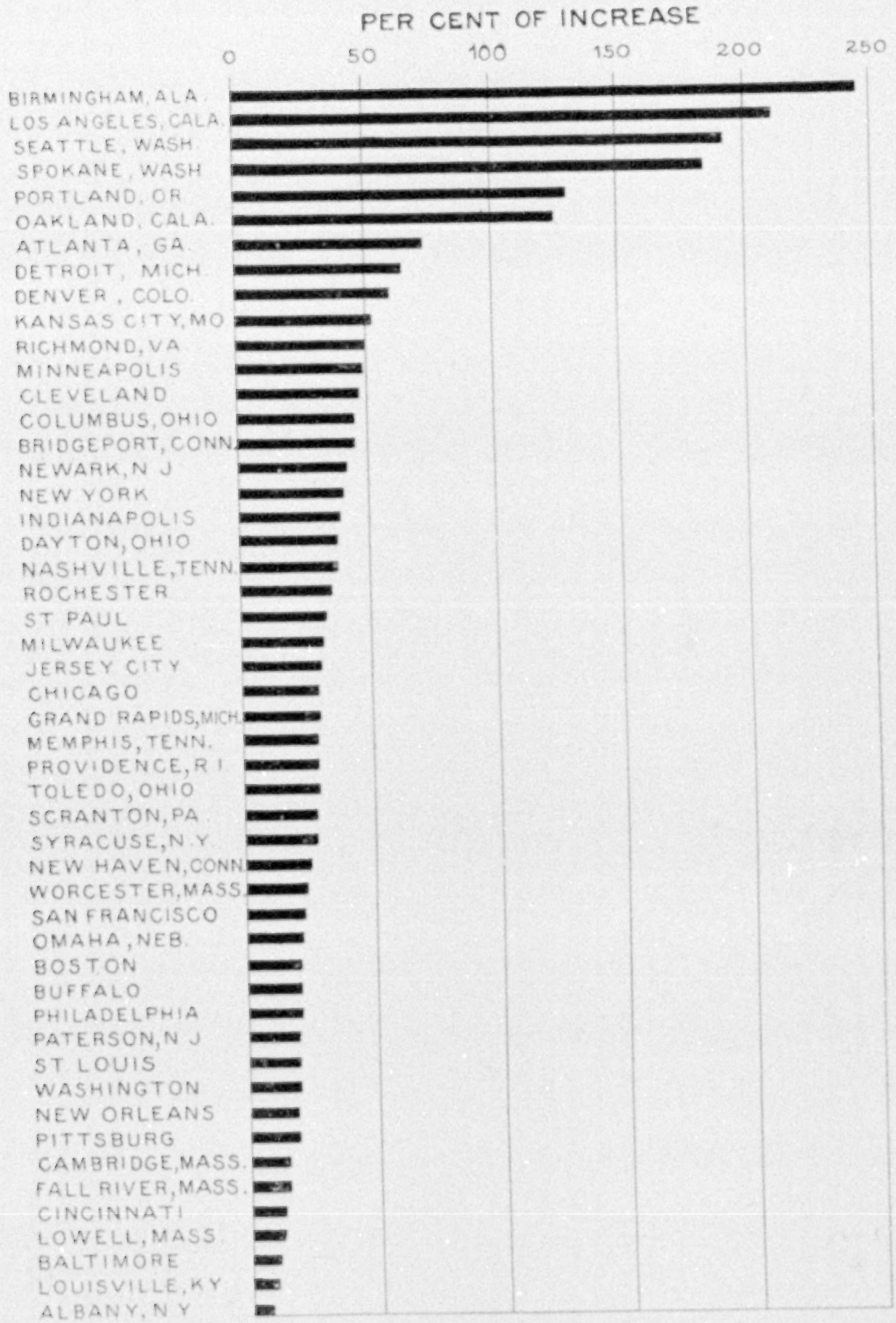


DIAGRAM TO SHOW THE RATE OF GROWTH OF OUR GREATER CITIES

sixth place among our great cities. This is due to the rapid development of the iron industry, for Cleveland is the leading place where the iron ore from Lake Superior meets the coke from the Pittsburg region.

Baltimore showed a slow growth and was forced out of sixth place by Cleveland. Pittsburg has not grown as rapidly as was expected of our leading iron center. The chief growth has occurred in the boroughs surrounding Pittsburg, in Allegheny County, which nearly doubled in population in the decade. If Pittsburg were to extend her corporate limits to include these boroughs, she would contain nearly three-quarters of a million people, and would be the fourth city of the country in population.

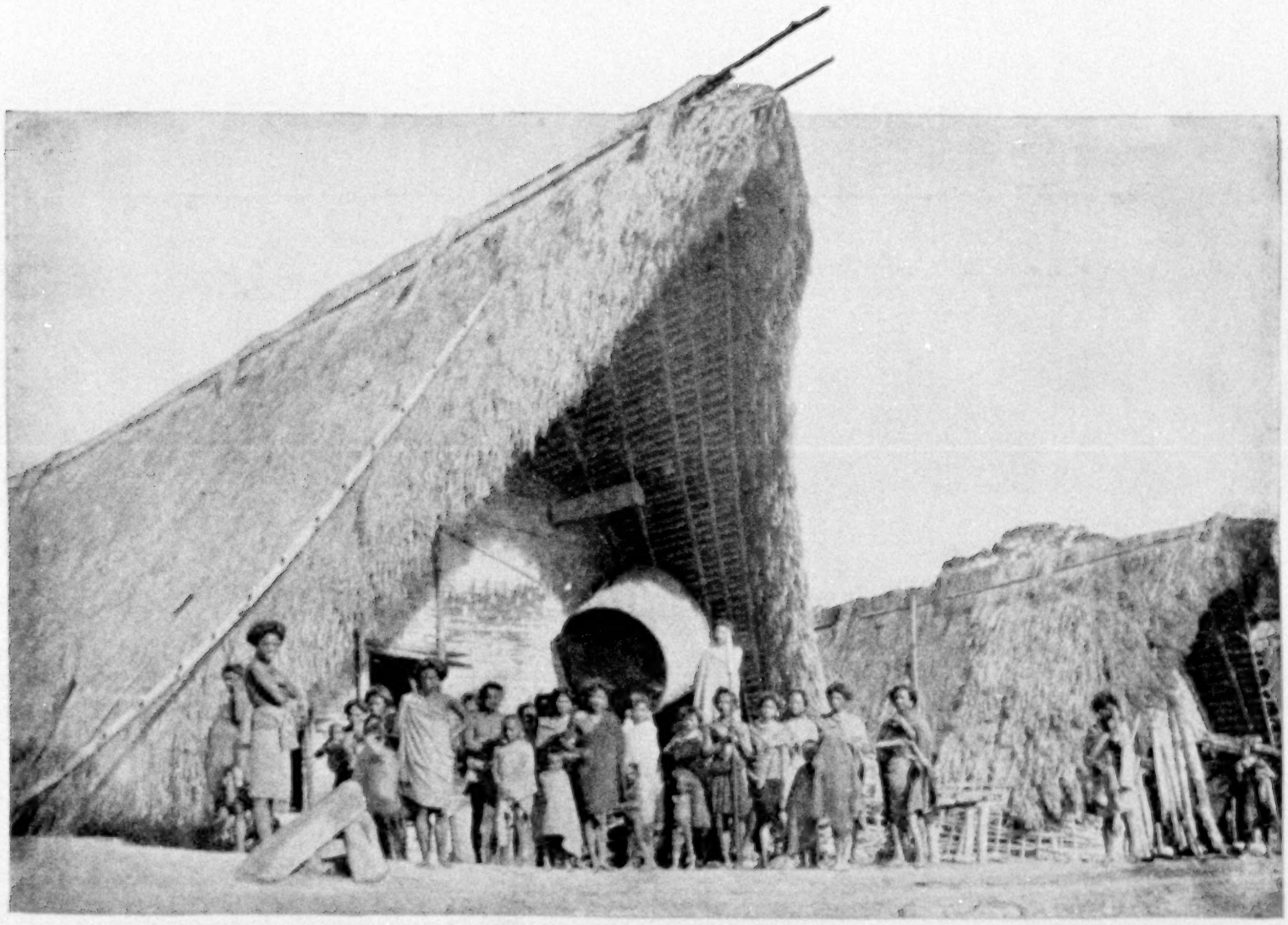
Detroit has grown at a tremendous rate, and has come up from thirteenth place to ninth. This is owing mainly to the development of the automobile industry, of which it is perhaps the largest center. The growth of Buffalo is at first sight disappointing, but the towns between it and Niagara Falls, its suburbs, have grown enormously, owing to the development of power from Niagara Falls.

The case of San Francisco is a marvelous one. Destroyed by earthquake and fire only four years ago, it has rebuilt itself, and has not only held its population of ten years ago, but increased it between a fourth and a fifth, while the cities across the bay have grown at almost fabulous rates.

Indeed, the cities of the west coast have grown tremendously. Los Angeles has more than trebled its numbers; Seattle and Spokane have nearly trebled theirs, and Portland has much more than doubled hers.

Of all the cities of the country, however, Birmingham, Alabama, has made the most startling strides. In 1910 it contained nearly three and one-half times as many people as in 1900. Its progress is due, as is well known, to its iron manufactures. Atlanta, Georgia, another city of the South, has had a great growth.

INDIANS AT CUZCO, PERU; WOMAN WEAVING ON NATIVE LOOM



HUT OF THE CHIEF, OR HEAD MAN, OF A NAGA VILLAGE (SEE PAGE 55)

The large basket suspended from the projecting roof is used for measuring grain. Photo from "Women of All Nations," Cassell & Co., New York, by courtesy of Mrs. Frank Wilde

WOMEN OF ALL NATIONS

The following article is abstracted from a fascinating work recently published by Cassell & Company, entitled "Women of All Nations—their characteristics, habits, manners, customs, and influence," in two very profusely illustrated volumes. The editors of the book, T. Athol Joyce and N. W. Thomas, Fellows of the Royal Anthropological Institute of Great Britain, were assisted by 20 eminent authorities. The late O. T. Mason and Walter Hough contribute the chapters on the Eskimo and North American Indians; Clive Holland describes the women of France and of Japan; Mrs. Frank Wilde, the unknown peoples of Assam; Miss Ella C. Sykes, the ladies of Persia, and other well-known writers who have written chapters are Lady Ramsay, Annette M. B. Meakin, Alice Werner, W. W. Skeat, Theodor Koch Grunberg, and A. R. Colquhoun.

SINCE man rose above the lowest grade of savagery, if not ever since the world began, woman has been the theme of poets, the model of artists and sculptors, and the despair of the male sex generally.

Taking a broad view of history, we may say that in one aspect it is the story of how woman has ceased to be the slave of man, as she is among the peoples on the lowest planes of culture, and has become his helpmeet.

European taste looks chiefly at beauty of form and feature, and, other things being equal, color—be it black, brown, or red—does not obscure the perception of

NAGA WOMEN FROM THE PATKOI HILLS: ASSAM (SEE PAGE 55)

These women were employed in carrying rations for the staff engaged in a survey of these hills. Photo from "Women of All Nations," Cassell & Co., New York, by courtesy of Mrs. Frank Wilde

it; but savage races, especially when they come in contact with European women for the first time, often complain that their sickly hue is not to their liking, and commiserate them. *Das ewig Weibliche* apparently ceases to be attractive if it is too far from the type to which man is accustomed.

STRANGE IDEAS OF ADORNMENT

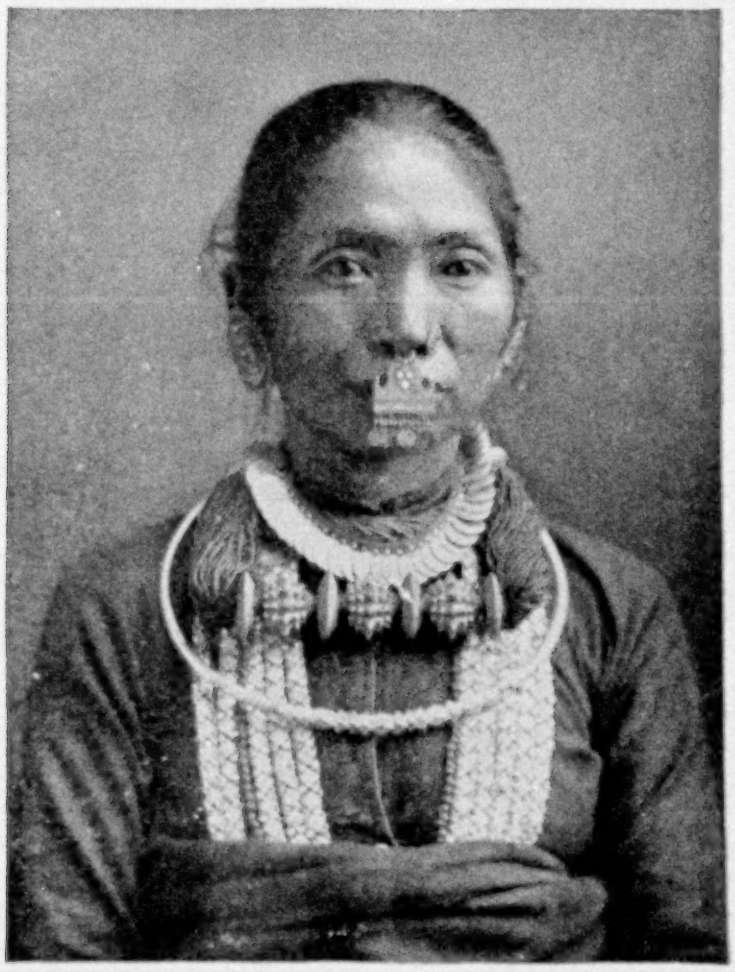
"A woman without ornament is like a field without water," runs the Eastern proverb; and, in spite of the fact that the Maoris of New Zealand urge that, "though a woman be ever so plain, men will still run after her," the female sex throughout the world is never averse to add to its personal charms by adventitious aids.

At the same time it must not be thought that among savages are to be found the choicest and most elaborate toilets, at least as far as the ladies are concerned. Within certain limits it is true to say that the lower we descend in the scale of civilization the more nearly the human race is found to approximate to the brute creation, in the fact that it is the sterner sex which is the more brilliantly ornamented. Under the conditions of latter-day civilization, of course, the position is reversed, and the varieties of feminine adornment quite eclipse the somber garb of a mere man, the uniforms of the "services," the coats of huntsmen and golfers, and the ties and waistcoats of undergraduates forming rare exceptions. The most primitive form of ornament consists in the attempt to alter the form of the body in order that it may approximate to some ideal of beauty; and, as ideals vary from tribe to tribe and from people to people, this attempt is made in divers ways.

To take a few examples: In Persia, among some of the Turkish and Moorish peoples, and certain African and South American tribes, the ideal of feminine beauty is found in excessive embonpoint, and the women in consequence suit their diet to the fashion. Among certain of the inhabitants of the northwest coast of America, a retreating forehead is essential to true beauty, and the heads of infants are deformed by means of a special appliance fixed to the cradle, so that they may acquire the requisite slope from nose-tip to crown. In some localities in South America tight bandages are worn below the knee in order to produce a swollen calf, and many tribes in Africa employ artificial means to elongate the breasts.

Polynesian mothers mold the noses of their children to prevent them from growing prominent. The Tahitians frequently said to the missionary Williams, "What a pity it is that English mothers pull the children's noses so much and make them so frightfully long."

In China the feet of the women are so



A WOMAN OF NEPAL, OF MONGOLIAN TYPE

The jewelry is silver, gold, and glass beads. The large beads are of carved wood. Photo from "Women of All Nations," Cassell & Co., New York, by Johnston & Hoffmann.

THE RANI OF SIKKIM (SEE PAGE 60)

Her head-dress is composed chiefly of pearls. Her ear-rings are of turquoise. The necklaces are of carnelian, turquoise, gold, and glass beads. Her dress is of the richest brocade. Photo from "Women of All Nations," Cassell & Co., New York, by Johnston & Hoffmann.

compressed as to be practically useless; but, though this sacrifice to fashion must be exceedingly irksome, it is not in reality fraught with such serious consequences as the waist compression practiced by their "civilized" sisters in modern Europe.

The fundamental object of such aids to beauty was näively admitted by a Chinese girl on whom a lady missionary was trying to impress the folly of foot-bandaging: "Me squeezy foot; you squeezy waist; all same what for, get husband."

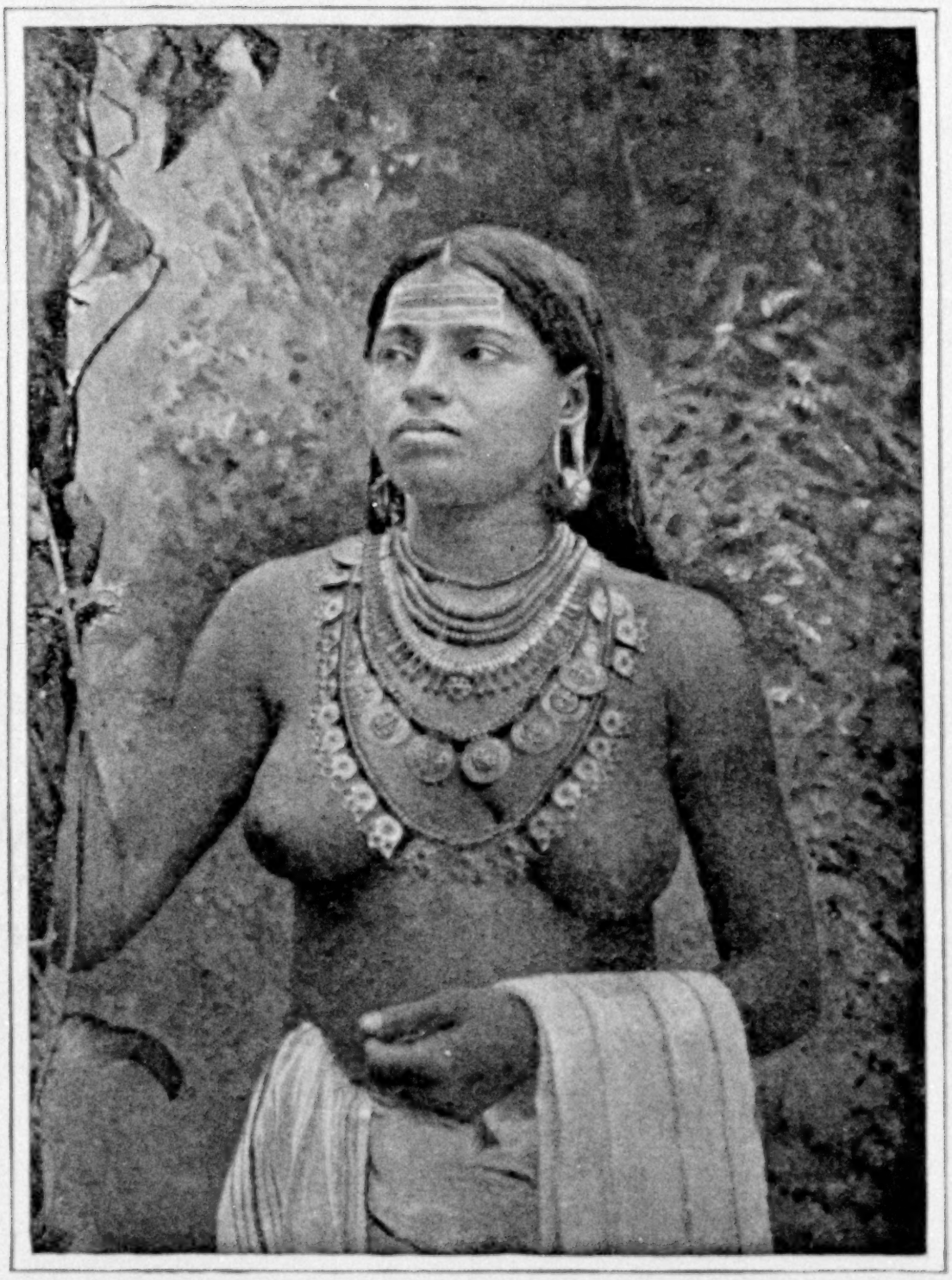
Painting the body as a form of ornament is another primitive aid to beauty, and is correspondingly widespread, especially in savage America. Frequently in Africa and Australia it is a sign of mourning. The commonest colors are red, yellow, white, and black, obtained from various kinds of ochre, powdered wood, lime, and charcoal. The familiar rice powder is found in Java; in Tibet many devotees of fashion adorn their cheeks with a fascinating mosaic of starch and seeds, while the Chinese use the starch only. Further "aids to beauty" are the *lac*, applied to the teeth of the women of the southeast of the Asiatic continent, and the *henna*, employed by Oriental ladies to color their nails and hair.

A more permanent form of coloration is found in the tattooing practiced by many of the fairer races, among whom may be mentioned the Maori, whose women ornament the chin in this fashion; the Ainu, by whom a coquettish little mustache tattooed on the upper lip is considered essential for women of fashion; the Algerians, and the Chukchi of northeast Siberia. Among the duskier peoples—in whose case this form of ornament would not be very apparent—incisions are made in the skin, the healing of which is retarded so that prominent scars result, which form intricate patterns on the parts of the body so ornamented. This custom is widespread in Africa, especially among the Congo tribes.

A MARWARI LADY, WIFE OF A RICH BUNNIA (MONEY-LENDER) (SEE PAGE 61)

She is loaded with jewelry. The gold cylinders on her necklace contain amulets and charms to keep away disease. Photo from "Women of All Nations," Cassell & Co., New York, by S. Narayan.

When we come to speak of the multitudinous objects worn on and around the body and limbs, their variety at first seems to baffle all description; but a short consideration elicits the fact that there are very few which have not their counterpart in the highest European circles. There is not, after all, a very great difference between a necklace of diamonds and one of teeth, each in its appropriate surroundings. The live birds carried in



DRAVIDIAN NAMBURI BRAHMAN LADY OF THE WEST COAST OF INDIA IN FULL DRESS

Her ornaments are of gold, and form the only covering she is allowed to wear above the waist in public. Photo from "Women of All Nations," Cassell & Co., New York, by Nicholas & Co.

the ears of New Zealanders have their parallel in the fireflies worn by Central American beauties and the live tortoise attached to the girdles of fashionable Parisiennes. It will be sufficient to say that the savage belles enhance their charms by all the armory of "jewelry" known to their European sisters. There are, however, a few forms of ornament which the latter have outgrown, and these are perhaps worthy of a few moments' consideration.

One of the little pygmy ladies who lately visited London had her upper lip pierced in three places, and often wore small brass rings through the punctures.

Exaggerated forms of this species of ornament are found among some tribes of British Central Africa, where the women wear large plugs of wood or ivory in the upper lip, distending the latter to an extent which, to European eyes, is hideous in the extreme. Similar large lip-plugs, but in this case worn in the lower lip, embellish the features of certain tribes in northwest and South America, while smaller ones are found among the Eskimos. The last named, as well as some South Americans, wear discs of this kind in the cheeks.

The nose, again, is frequently the support of an ornament of some sort. In New Guinea, Australia, and parts of Africa and the Malay states, slender bars of wood or bone are worn through a hole in the septum, while the nose-ring and nose-stud are common in India, and the former among the Tartars.

CLOTHING AND MODESTY

From ornament we pass imperceptibly to the question of clothing; and, indeed, there is no real difference, in so far as the former has evolved out of the latter. We may even go further and say that it is not an innate feeling of modesty which has produced clothing, but clothing which is responsible for the feeling of modesty in man. We have only to look at a few of the non-European races to see how entirely conventional this feeling is, and how it differs in various parts of the globe.

The first care of a Mahometan woman surprised at her bath is to conceal her face; the Chinese lady would feel excessive shame at the uncovering of her foot; the Sumatran at the exposure of her knee, and a woman of a certain tribe in Africa would be terribly upset if the small twig at the back of her girdle should happen to fall off. Some Asiatics think it unseemly for a woman to show her finger-tips, and, in America, a woman of the northwest could not bear to be seen without her lip-plug, while a Carib beauty would far rather appear in public without her girdle than minus her paint.

Another instance of the conventionality of modesty is seen in certain aspects of Japanese life and ideas as compared with our own. Among this people the two sexes in some places still take their baths in common without finding the process at all awkward, yet the representation of the nude in Japanese art is rare and even considered improper. With us, of course, the reverse is the case. In few places in England is mixed bathing, even in full costume, allowed; yet the nude in art, thanks to classical traditions, is common and generally passes unchallenged.

THE NAGAS OF ASSAM, INDIA

Writing of the Nagas, Mrs. Frank Wilde says that 50 years ago they were savage head-hunters. The girls of this tribe would not marry a man unless he had heads to show as proof of his courage. Having slain an enemy, a warrior may wear a kilt decorated with cowrie shells. Collars are also worn, ornamented with cowries, tufts of goats' hair dyed red, and locks of hair from the heads of persons killed. Some tribes wear a curious wooden tail decorated with hard white seed and goats' hair. I have in my possession a Naga tail to which are attached long locks of human hair, which must represent the spoil from many a scalp.

Naga villages are built on inaccessible hills, or along a steep spur; their huts differ entirely from those of other hill tribes. They have high gable ends, and the roof slopes down and back until it nearly touches the ground. The eaves also almost touch the ground, as shown in the illustration on page 49. The hut is divided into three compartments. The large one in the center is used as a sleeping or living-room; the small division in front serves as a grain store, and here the women pound the rice for making the rice-beer, which is the favorite drink of the Nagas. It is made and stored in the small compartment at the back of the living-room.

Nearly all the Naga villages have a large hut which serves as a club and sleeping apartment for the bachelors, and not a few have a similar hut for the unmarried girls, which is presided over by

XUM

TAMIL COOLIE WOMAN ON A TEA ESTATE: CEYLON

(See page 61.) Photo from "Women of All Nations," Cassell & Co., New York, by Skeen & Co.

a widow or elderly female. In other villages the girls sleep together by threes or fours. Each hut has a platform jutting out over the hillside and commanding a view of the surrounding country. This was necessary in former days, when the villages were so constantly raided by warlike neighbors. The young women spend the day on this platform preparing the cotton yarn for weaving; the primitive hand-looms are tied to the house-posts; the girls sit on the ground and swiftly throw the shuttle backwards and forwards.

The villages are divided into wards, called khels. Each khel is a distinctive unit, and is ruled by a headman. Should one khel be attacked by another khel, the members of adjoining khels will calmly look on and never attempt to interfere, or even to defend the women and children. In one of the government reports a Naga, giving an account of a village fight, stated that one man, five women, and 20 children were killed. He described the killing of the children as rare sport, like the killing of chickens.

The women of some of the tribes living in the more remote hills wear circles of cane round their waist and strips of cane wound round their legs below the knees. The illustration on page 50 is from a photograph taken by the late R. A. Way, Esq., chief engineer in charge of a survey expedition in the Patkoi Hills. These women were employed in carrying rations. It was with great difficulty that they were persuaded to allow themselves to be photographed.

The Naga girls wear their hair cut short, but after marriage it is allowed to grow long. The girls wear necklaces of beads and shells; bracelets and anklets of brass, sometimes of silver. On marriage these are discarded. A married woman no longer joins in the dances; for her the serious business of life has begun, such as helping her husband in the village "jhoom," gathering firewood, and carrying water. The latter task is no light one, for the water supply is frequently 300 to 500 feet down the hillside, and the water is carried up a steep path in sections of thick bamboos. One wonders why, with so little inducement to marry, the Naga girls give up the

A NORWEGIAN GIRL SKI-ING

Photo from "Women of All Nations," Cassell & Co., New York, by A. B. Wilse, Christiania

freedom they enjoy as maidens. A widow inherits all her husband's property on the condition she does not remarry, and, at her husband's death, she is called upon to state whether or not she intends to do so! Should she retain the property and afterwards remarry, the case is arranged among the relatives, but formerly she was put to death by her husband's relatives.

Most of the tribes bury their dead, and in the funeral ceremonies a woman's basket and weaving-sticks are placed over the grave. The dead are buried either in the village street or outside the village bounds. In some tribes the corpse of a child or young girl is buried in the earthen floor of the house, and a pathetic reason for this custom was given to a government official by a Naga who had

Photo from David Fairchild

LADIES IN THE COSTUME WORN BY THE JAVANESE IN THE DUTCH EAST INDIES

Photo from David Fairchild

BRITISH INDIAN GIRL BORN IN CEYLON

SAXON PEASANT GIRLS IN FESTIVE COSTUME

Photo from "Women of All Nations," Cassell & Co., New York, by courtesy of Amy A. Locke

just lost a young daughter: "She might be frightened if left out alone, with nothing but the sky above her at night."

SOME OF THE PEOPLE OF NORTH INDIA

India has become the home of many nations and many tongues; of many forms of religion and many degrees of civilization. On the one hand there are people who are justly proud of a civilization older than that of the nation by which they are governed; on the other there are tribes living in the forests who are as savage and uncivilized as the Polynesians.

In its geographical features the north of India presents every variety of form and climate. There is the plateau, where the blizzard rages in winter and the land is iron-bound in frost; the arid plain, waterless and sun-scorched; the snow-capped mountain, inaccessible to the hardiest mountaineer; the smiling valley, a veritable paradise to ease-loving humanity; the poisonous swamp and the dense forest, the home of the wild beast and deadly snake. Most extensive of all are the broad, level tracts of fertile land, which yield two crops a year to the industrious agriculturalist. In such a country there was room for a long succession of invaders without the extermination of the weak. Descendants of the different types are still to be found throughout the breadth of the land. They have adapted themselves to the climate and to the nature of the country in which they have settled, and consider themselves in every respect the inheritors of the land.

The Rani of Sikkim, a small state lying on the southern slopes of the Himalayas between Nepal and Bhutan, has the appearance (see page 52) of being a child of ten or eleven. The little figure is loaded with rich brocade and masses of jewels. There is no sign in those placid features that she is discontented with her lot, or that she has any thought of a different life. She has the greatly admired wheaten complexion, an olive tint that is common in the south of Europe. Her hazel-brown eyes are darkened on

the lower lids to heighten their beauty. Her lips are reddened, and her skin, from seclusion and the use of cosmetic oils, is as smooth and soft as satin.

Of a different type altogether are the Marwari ladies (see page 53). The Marwari is a merchant and money-lender, known as a bunnia. He is a dealer in corn, in which commodity he makes "corners." The jewels worn by the women indicate the lucrativeness of the trade. There are bunnias all over India, and the trade is not confined to one caste. By religion the Marwaris who come from Marwar and Guzerat are Jains. The Jains of the present day venerate the cow, employ Brahmans in their religious rites, and worship at Hindu temples. In some of its features Jainism bears a resemblance to Buddhism, but it rejects the doctrine of Nirvana. The preservation of life in every form is an article of the faith. It has led to the establishment of animal hospitals called pinjrapoles. The unfortunate creatures that find an asylum in these institutions would be happier dead. They are ill-fed and ill-cared for.

Particularly striking, says E. A. Crawford, are the women of Ceylon. Most travelers east of Suez touch at Colombo, and are more or less familiar with the brown faces, regular features, and deftly coiled long hair of the crowds thronging its quays and streets. Perhaps many also have shared the mistake of the English lady who wondered why so many more women than men walked abroad in this Oriental city. She soon discovered that the round tortoise-shell comb, to us reminiscent of little girls of mid-Victorian period, is reserved exclusively for male persons, and that the adornment of long hair and petticoats is shared by men with the gentler sex. So, of the seeming feminine crowd, maybe all are males.

The immigrant Tamils, especially on the up-country tea estates and south and west of Ceylon, are of the coolie caste, so that few Tamil ladies are usually met with. There are, however, some who, in good looks, charm of manner, and education, need not fear comparison with their European sisters. Their dress is rich and effective, and they are loaded with costly ornaments in their ears, round their neck, in their hair, and across the forehead, and also round their arms, wrists, and slim ankles. The toes, too, are decorated with rings, and the wing of the nostril is pierced to receive a jewel.

Amongst the population of immigrant Tamils who cultivate tea and other products in the hill country of Ceylon, large numbers of women and children of the coolie caste are employed chiefly to pluck the leaf and care for the bushes. One sees them dotted over the steep hillsides during the sunny hours, each with a large but light basket strapped to the back. The mothers arrive on the field with their babe across their hips, and, leaving them to slumber or kick about, innocent of garments, under the shade of a tea-bush near, proceed to fill their baskets with the glossy leaves.

The Tamil mother brings her elder children to help in the plucking, and all day the family is out of doors, happy in the fragrant sunshine. It is an existence that may well be envied by struggling workers in murky cities. Perfect air, congenial labor, and freedom from care, on five shillings a week for a pater-familias!

Ceylon is a kind of El Dorado to the dense population of the southern part of the Madras Presidency, whence the coolies (or laborers) arrive in crowds, often miserably emaciated. They soon fatten on prosperous Ceylon, and invariably return to their "coast," as they call the continent of India, in better circumstances, and not seldom purchase the coveted bit of land which is the summit of their ambition.

DAMASCUS, THE PEARL OF THE DESERT

By A. Forder, of Jerusalem

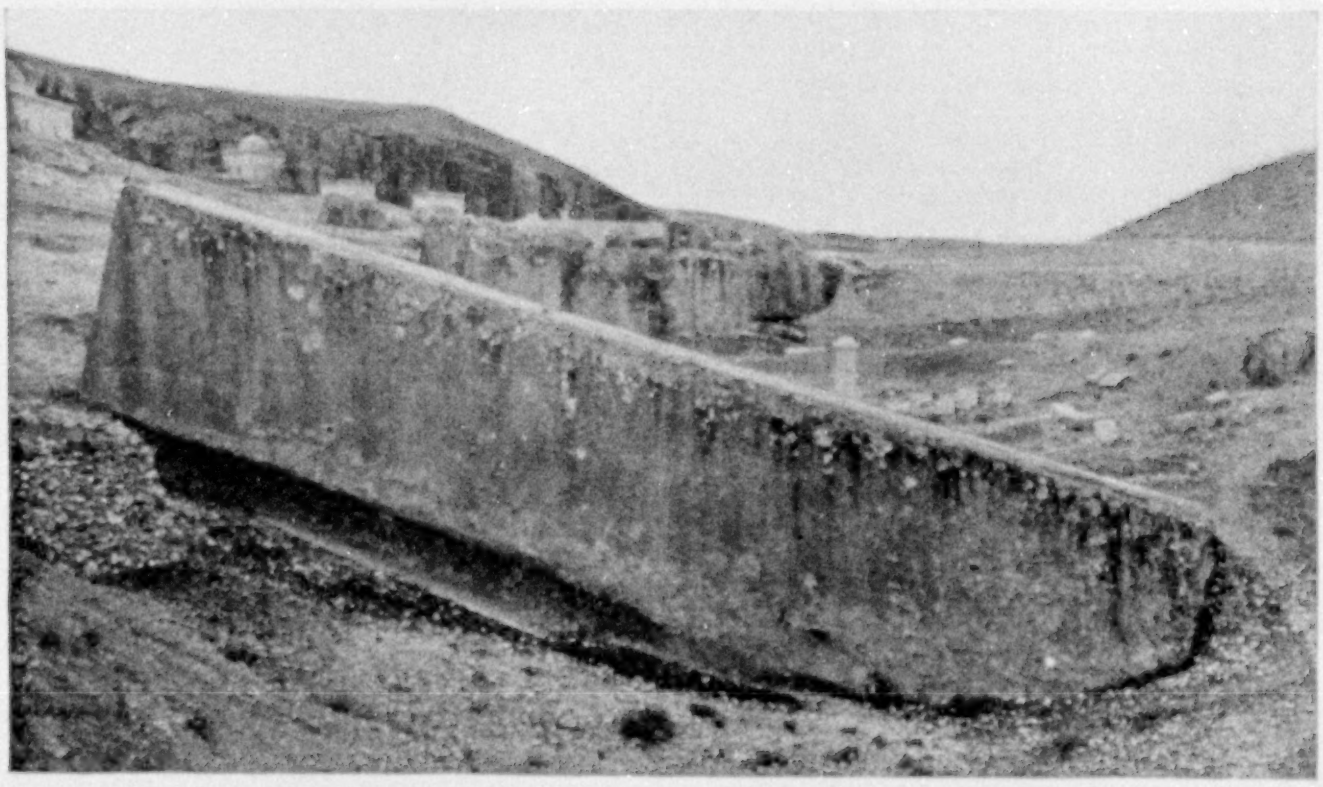
With Photographs by the Author

LEBANON and Damascus! How far back such names seem to carry us in the history of the world! Millenniums ago Damascus had its attractions for the Oriental, and today there is no city in the East that so charms Arab and Turk. The Bedouin from the sandy stretches of Arabia and arid Syria has given it an appropriate name in "The Pearl of the Desert"; for, with its thousands of white houses, mosques, and towers, encircled with miles of orchards and gardens, each vying with the other in foliage, the city indeed has a very charming appearance.

Damascus dates back to the time when the Pharaohs ruled in Egypt, and is one of the few cities of the Orient that has had a continuous history and existence.

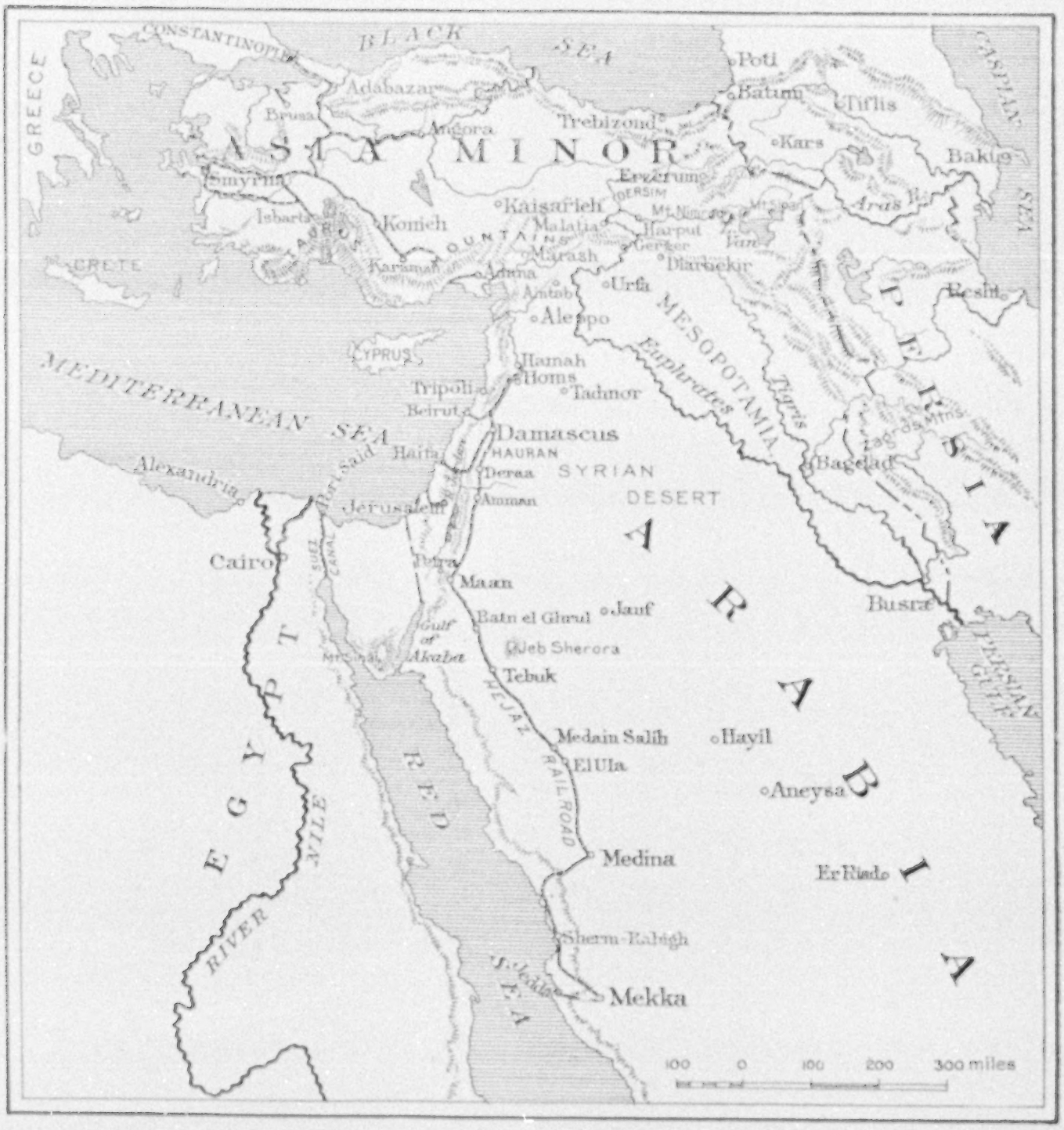
This city, which is second in importance in the Turkish Empire, may now be reached by three different railroads, thus making it a very attractive resort for the trader from all parts of the East, whereas a few years ago it was difficult of access. Its population is estimated at about some two hundred thousand souls, not including the garrison of many thousand soldiers. Despite the mixture of nationalities and creeds, the temper and endurance of the inhabitants is remarkable, for one never reads or hears of riots or impending trouble in Damascus.

The main and most used road to Damascus is the railway from Beirut, the principal port of Syria. This line is a narrow gauge rack-and-pinion system, crossing the mountains of Lebanon at a



THE MONOLITH OF THE LEBANON

This is the largest known stone ever quarried. It is 72 feet long, 17 feet 2 inches square, and is estimated to weigh more than a thousand tons. For some unknown reason it was never finished (see page 65).

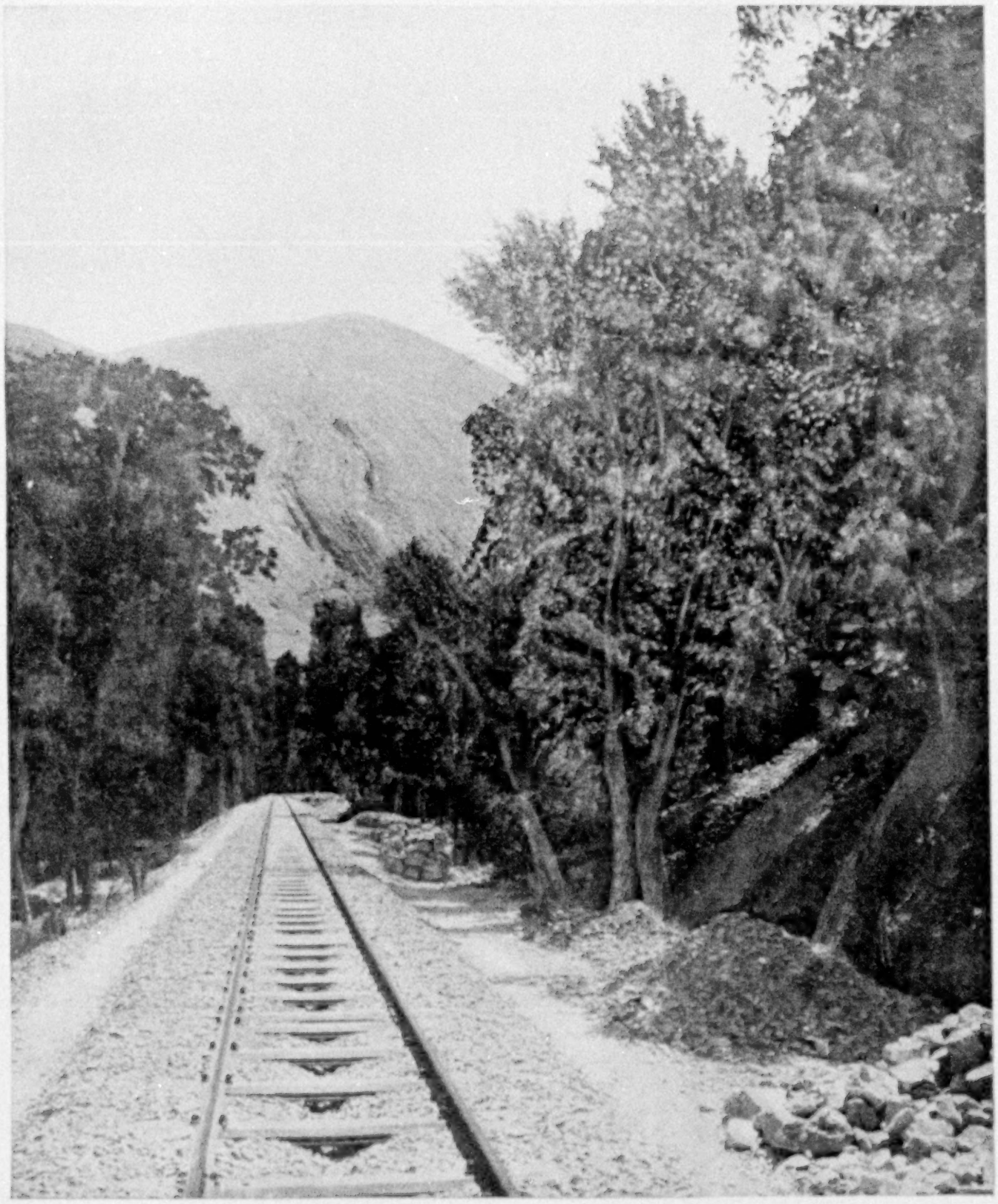


MAP SHOWING LOCATION OF DAMASCUS

height of 4,880 feet above sea-level. Few have any idea that hidden away among the mountains are sights and scenes to excite the admiration of even the most disinterested; but, in order to see them, the comfort of the train has to be left and a number of miles covered in the saddle.

The railroad, built by the French, at times runs through some very fine scenery, and the entire journey of 90 miles is a constant panorama of mountain, forest, or plain.

At different points scattered in the mountains are to be found groups of cedar trees which until recent years suffered so severely at the hands of the natives that they were fast disappearing; but lately the government has placed guards at the various groups to prevent any more devastation. The largest group of these ancient and interesting trees is



SCENE ON THE BEIRUT-DAMASCUS RAILROAD

The line runs through deep valleys, forests, and mountain torrents and round the edges of precipitous cliffs, and is a fine piece of engineering skill. During winter traffic is frequently stopped by heavy snow-drifts.

to be found at Besherry. Here on an elevation are about 400 trees, the highest of which does not exceed 80 feet, while some are from 30 to 40 feet in circumference. By reason of heavy snows these trees can only be reached during the months of summer, when crowds of natives make merry under the pleasant

PROVIDING FOR THE WINTER

The sheep is coaxed to eat in order to increase its fat, so that the family may have sufficient grease with which to saturate their food during the winter months (see text below)

shade afforded by the spreading branches of these monarchs of the mountains.

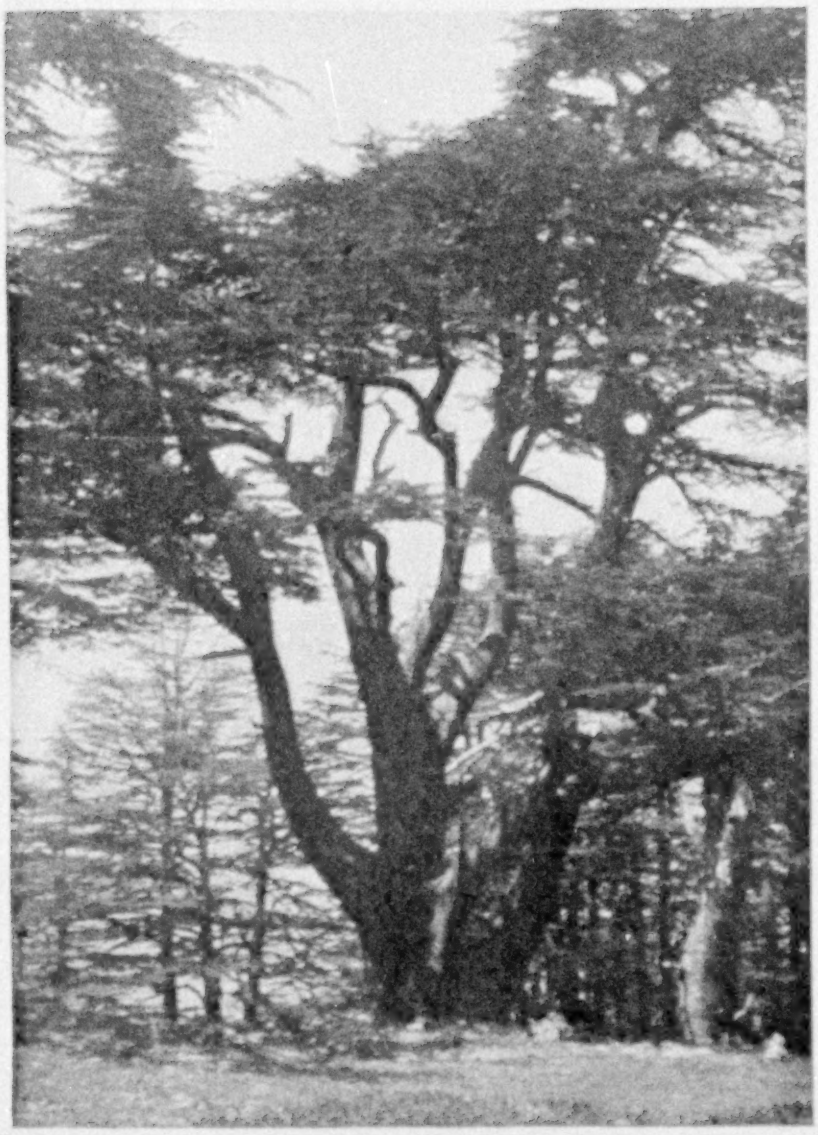
The district of the Lebanon also carries the palm for having in its borders the largest stones ever quarried in the known history of man, for high up in the walls of an old castle in the ruins at Baalbek may be seen stones that are nearly 65 feet long and 15 feet square, while in an old quarry a mile away is a solid block of stone that measures 72 feet long and is 17 feet 2 inches square, the probable weight being considerably more than a thousand tons.

To what period these stones belong, or what race of giants hewed such massive blocks, or by what means they were moved from place to place and hoisted into position we have yet to learn, for from the absence of inscriptions the handlers of these almost immovable loads seem to have been content to pass off the stage of history unknown.

Were a visit made to the homes of these mountain people, there would be much of interest, for the raising of the silk worm and the subsequent silk harvest gives occupation to the majority of the men and women in the many villages. One thing is worthy of note, viz., all the eggs for the silk worms are brought yearly from France by men who are sent especially for the purpose. For some reason the eggs that are produced the previous season do not mature in the mountains; hence the necessity for importing from Europe.

In every home throughout the mountains may be seen women and girls compelling an already too satisfied sheep to swallow a little more of the green food that has been gathered off the hillsides or purchased from some near-by garden or mulberry plantation.

This pet lamb, subject to frequent bathings, is being fatted to provide savory dishes through the long and severe winter that faces the native. Dur-



ONE OF THE BESHERRY GROUP OF GIANT CEDARS

These trees, once so much in demand, are slowly declining in number, beauty, and value, as no one is responsible for their care or cultivation. They might be grown by the thousand and a large business so built up.

ing the month of November the fatted sheep is killed and cut up into mince-meat and melted in its own fat, to be used as a relish and sauce with the boiled rice or wheat that forms the staple dish of these hardy people.

Should occasion require, the fatted sheep may be killed to provide a feast for some unusual event, and in this custom there may be a perpetuation of the "fatted calf" of the Gospel. Hours are spent by the women and girls coaxing food down the throats of these overfed sheep, and toward the close of their existence they are so fat that they are unable to stand.

In some parts of the Lebanon the earth lends itself to the art of making pottery, and thousands of the natives get a livelihood by the manufacture of all kinds of earthenware vessels. Hidden away in the corner of his one-room house, the potter turns his wheel just as did the one to whom the ancient seer was commanded to go in the adjoining country of Palestine. From this primitive machinery comes many a vessel that for shape and form would do credit to the most skilled workman of the Occident. From the wheel the pottery is taken to be dried in the sun, then handled by the women, who do their best at decoration by painting all kinds of designs on the jars ere they are consigned to the furnace to be baked.

After the baking they are sold to traders, who transport them on muleback to all parts of the country, both east and west of the Jordan, to be sold or bartered for what we would think a ridiculously low price, but what enables many a man from the proceeds to retire and leave his sons to turn the wheel.

Unfortunately emigration to the United States has drawn away the flower of the Lebanon, and the pottery industry is in danger of becoming a thing of the past unless the sons of the land realize that there are fortunes in the clay of the mountains of their native land as well as the factories of America.

But the Lebanon contains natural beauties and wonders that equal if not surpass those of other lands. There is a remarkable natural bridge that has a span of 125 feet with a river 75 feet beneath it. This bridge has been formed by the running of the waters of centuries from the melting snows on Jebel Sennin, which rears its head 8,000 feet above sea-level and is "monarch of all

A POTTER AT THE WHEEL: DAMASCUS

A familiar scene in many of the homes of the Lebanon. Where such work is done each member of the family takes some share in preparing and bringing the clay to the wheel, on which it is skilfully molded into all kinds of vessels.

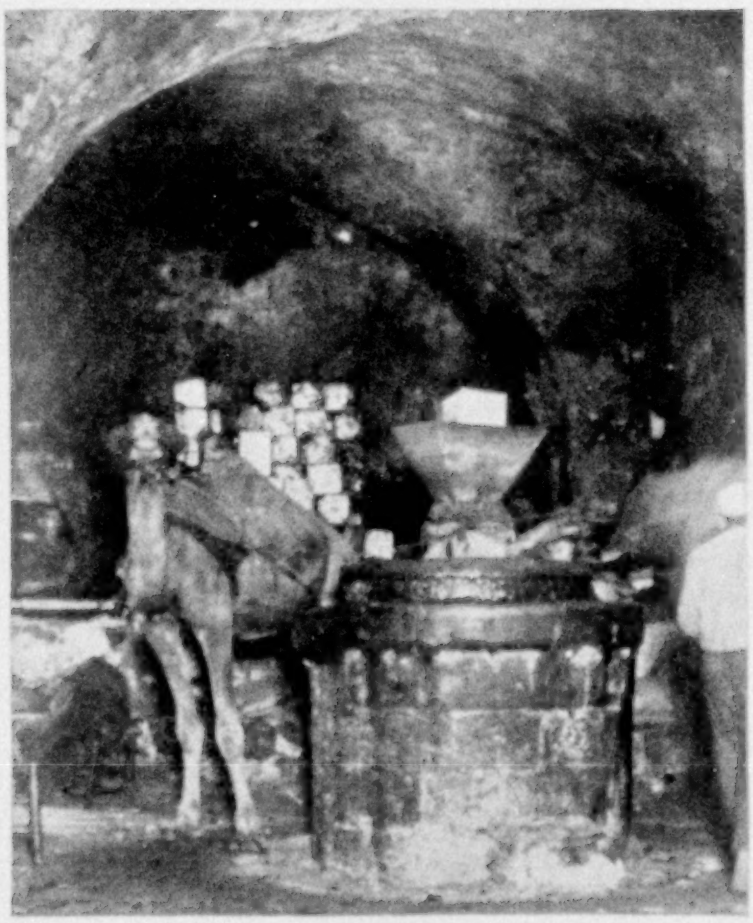
it surveys" in the Lebanon. Over the bridge is a constant stream of traffic, for it is one of the main roads through the mountains. The native has no eye for its wonder, and the traveler from the West rarely crosses it.

Another charm of the Lebanon is the abundance of cold, clear spring water. One is led to wonder why the Creator has been so lavish with the life-giving fluid in the Lebanon, while lands near by languish for want of it. Everywhere cascades, streams, springs, and waterfalls abound, sometimes to such an extent as to cause serious alarm and danger to the native and his property, but the finest fall of water in the mountains is to be seen at Afka, far away in the east, and requiring a long ride in order to reach it.

Out from a huge cavern high up in the cliffs rushes a strong flow of water, which comes tumbling down over the rocks into the valley below, in its course forming one of the finest waterfalls to be seen in all the Orient. In a land where water is so precious, it is no wonder that crowds of people resort there for many weeks during the long, hot

THE GREAT NATURAL BRIDGE OF THE LEBANON

This nature-made crossing has a span of 125 feet, and 75 feet beneath flows a good stream of ice-cold water that springs from the mountains half a mile away (see page 66)



A PRIMITIVE BUT EFFECTIVE MILL: DAMASCUS

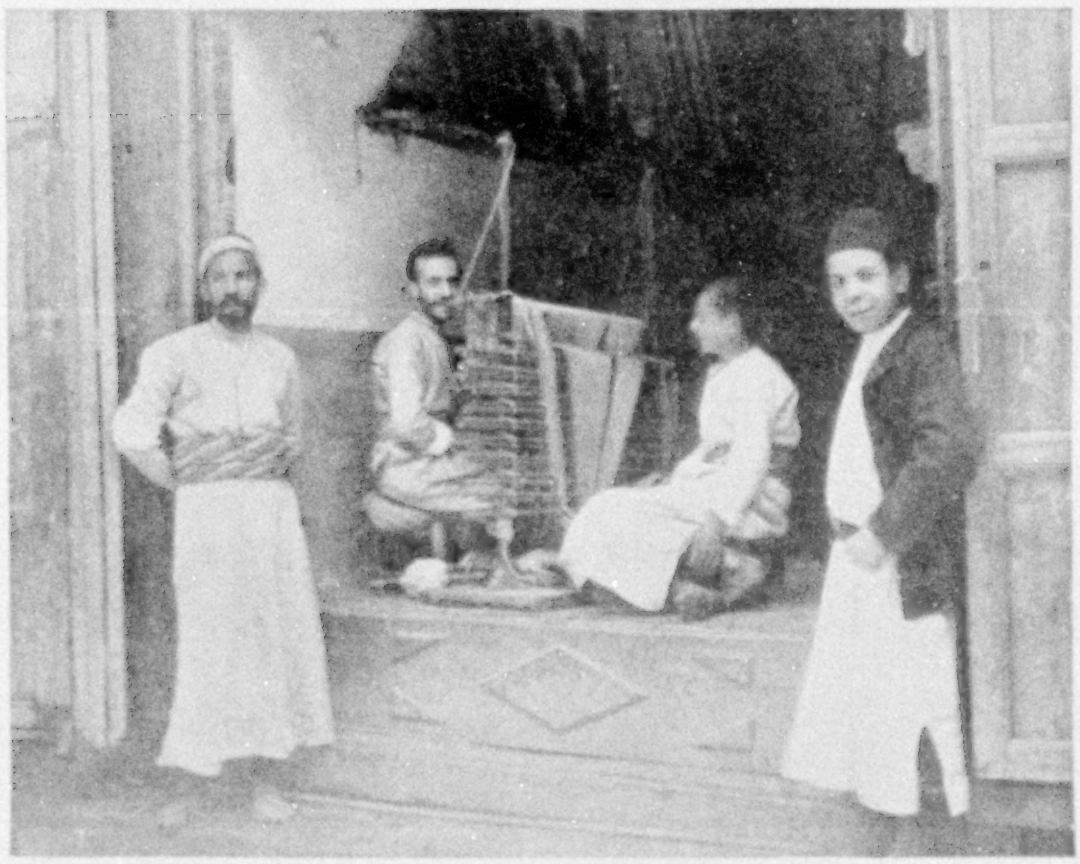
A camel takes the place of steam to revolve the heavy stones that crush the grain or berries for which the mill is used. The camel is blindfolded so that it may not become giddy by its many revolutions. A difficult photograph to secure, taken with a flashlight.

months of summer. It may be interesting to those versed in mythology to know that this fall and spring are connected with the myth of Venus and Adonis, and on a spot not far away are the remains of a temple to Venus which was destroyed by the Emperor Constantine because of the indecencies practiced there.

But we must not tarry longer over the charms of the Lebanon, but hasten to the city that lies under the shadow of its hills.

Damascus, as already stated, is the capital of Syria, and is the rendezvous of peoples from all parts of the Mohammedan world. It is one of the sacred cities of the followers of him who, having seen the city from the back of his fiery steed, requested that "as he had to enter paradise but once, it might not be in this life, but after he had passed out of it into the future state."

One cannot be long on the streets of Damascus without being interested in the motley crowd of humanity that swarm its streets, and, in spite of creed and nationality, manage to keep sweet-tempered.



STREET SCENE IN DAMASCUS

A weaver at his loom making curtains or cloth, which will be exported to Europe and sold at a high price. Thousands of men and boys are constantly employed in this manner; their daily wage is about 12 cents.

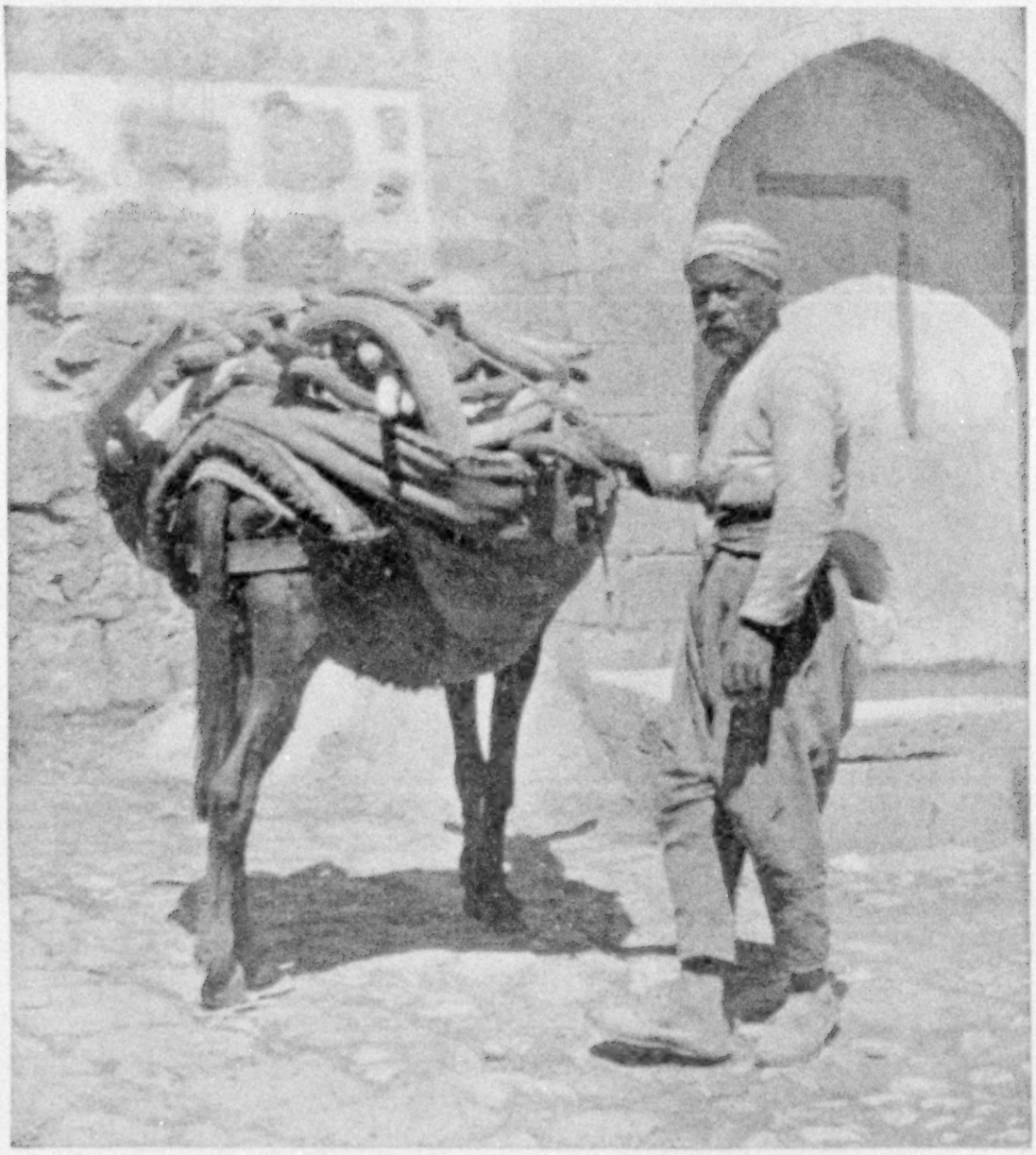
The spick-and-span Turkish officer fresh from Constantinople rubs against the swarthy, sunburnt son of the desert without even a word of scorn or anger; the Mohammedan shoulders the Jew as if they were brothers in the faith; the spotless visitor from the Occident jostles the not-any-too-clean peasant from the surrounding villages, while Persians, Moors, Afghans, Indians, Egyptians, Sudanese, and others from many parts of the globe hurry along, all intent on something of importance that has brought them to this metropolis of the Orient.

If you turn aside into the spacious bazaars you are compelled to stop and watch the many kinds of trades that give occupation to all classes of the Damascenes. Be it said to the credit of the city that very few idle people are seen in the streets, and the absence of beggars is noticeable, for work is no disgrace in Damascus, and the boys of the city form no insignificant part of the machinery that is responsible for the enormous amount of merchandise produced and exported from the town.

In different streets may be found together the shoe-makers, iron-workers, saddlers, carpenters, bakers, confectioners, drapers, silk merchants, grocers, stone masons, gold and silver smiths, druggists, and many others, all engaged in their different callings, and those of a mechanical turn of mind are invited to watch the worker at his calling without being badgered to buy his wares—a curse in almost every other Oriental city.

On the streets are to be seen venders of almost everything under the sun, especially in the way of eatables, and, to those who are familiar with the value of the goods offered for sale, the words of the native visitor are plain when he informs you that "in Damascus you can sup or breakfast for nothing," because of the little cost of food.

On the same street, within a few yards



AN INEXPENSIVE LOAD

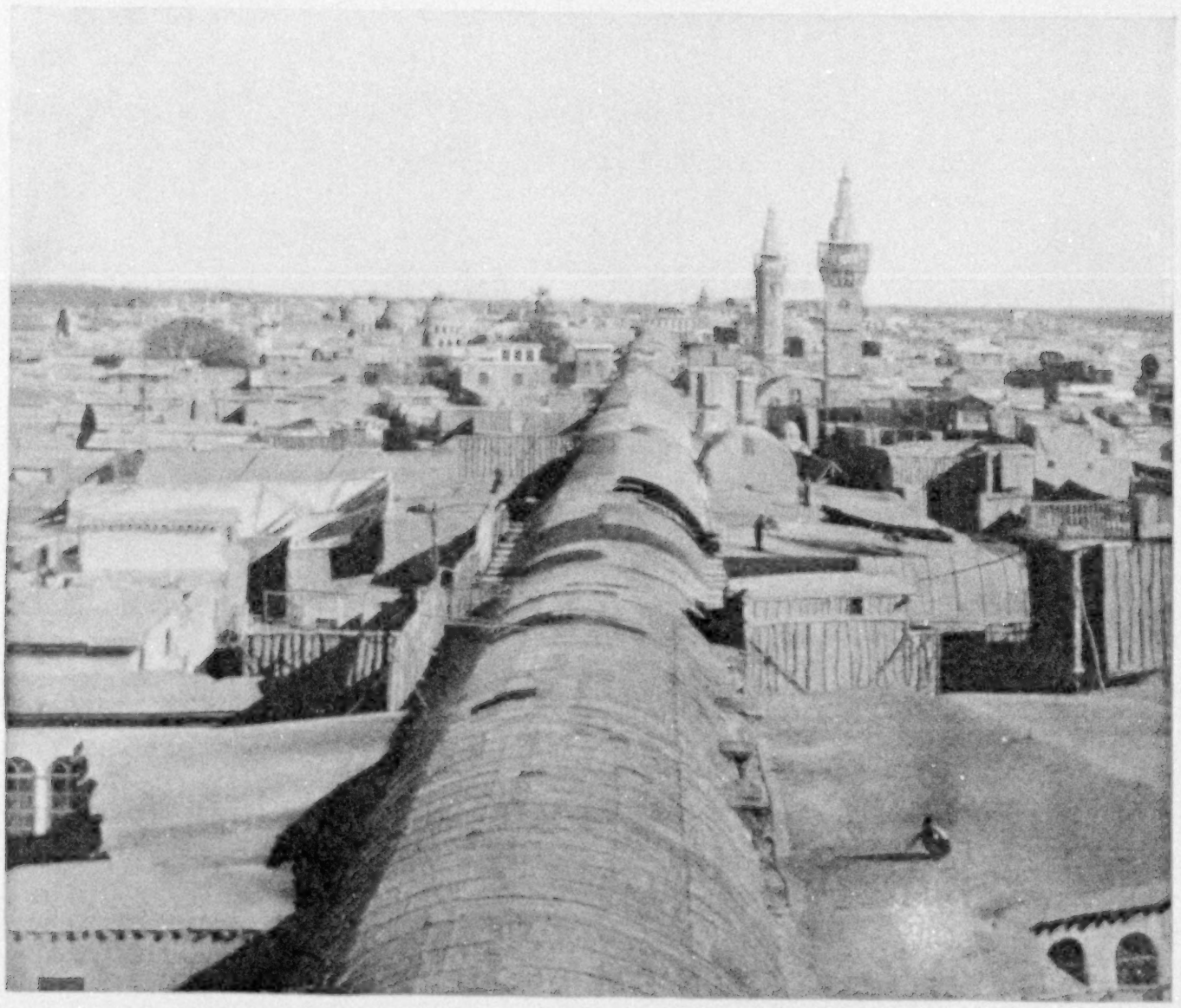
Cucumbers by the donkey loads are for sale on the streets of Damascus. For a good part of the year 6 pounds weight may be bought for 2 or 3 cents

of each other, may be seen the vender of cucumbers with his wares fresh from the garden, exposed on a donkey's back (when sold the load will realize between 20 and 30 cents); the bread-seller with his warm cakes of bread on a tray resting on a stand ready to supply the hungry with a good-sized loaf for a cent, and the vender of milk, who for another cent will give you a large basin of sweetened milk in which to soak your loaf. At different seasons you may fare well at little cost off melons, grapes, apricots, plums, peaches, apples, oranges, figs, etc., all the products of the gardens and orchards around the city.

But some will ask whence comes all this abundance, for in no other part of Syria or Palestine is there such a profusion of fruit and vegetables at such low prices. The cause is the abundant water supply provided by the ever-flowing and life-producing river Barada, the Abana of the Bible.

Rising some miles northwest of the city, the river is conducted to all parts of Damascus through thousands of channels. It is also tapped to irrigate the gardens, orchards, and fields outside the city that are constantly under cultivation to supply the needs of the inhabitants.

There are many pleasant spots by the



ROOF OF "STRAIGHT" STREET IN DAMASCUS

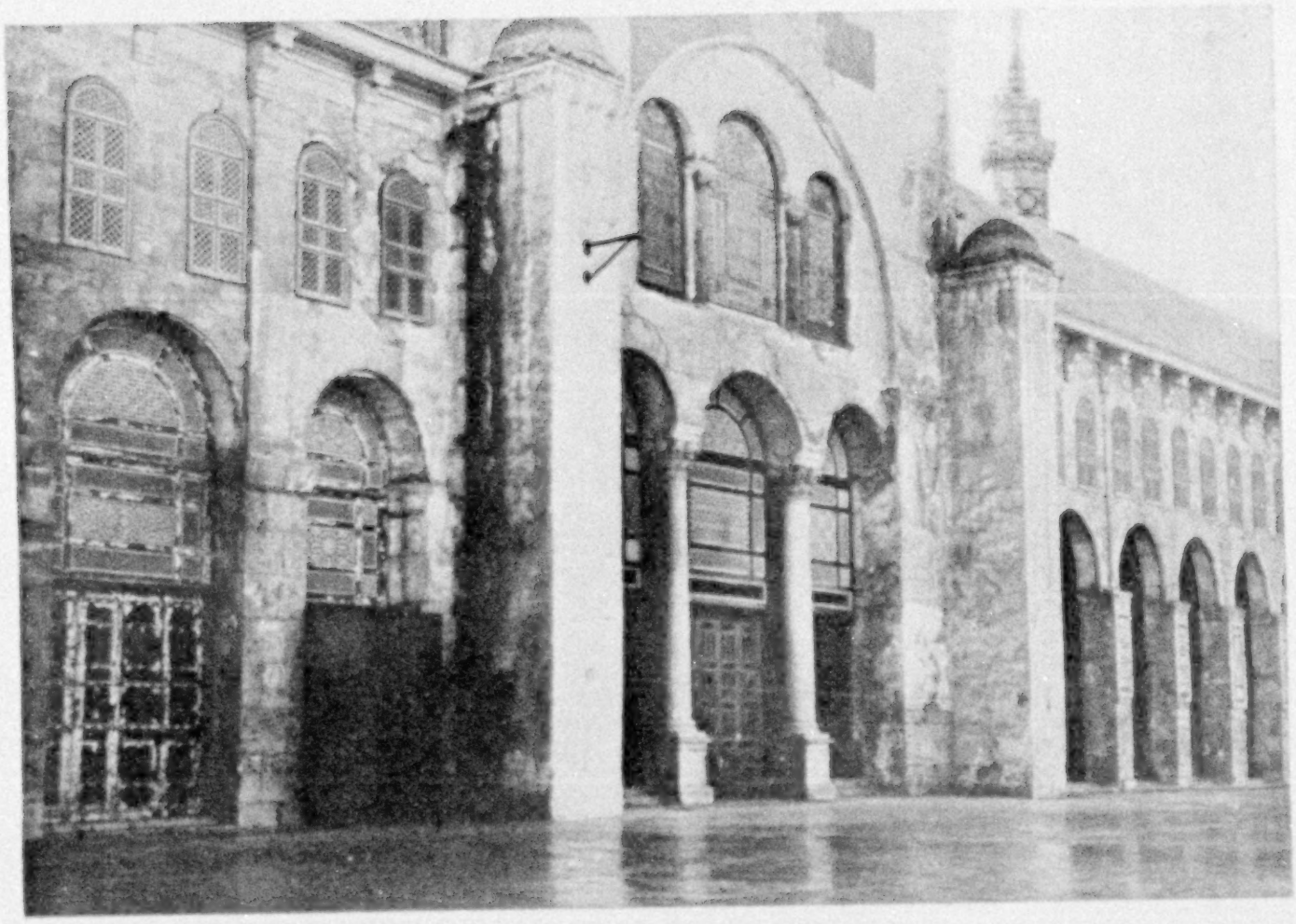
This view, taken from a minaret, makes it appear as though a huge pipe ran across the city between the houses, whereas it is only the arched roof of the longest street in Damascus

river's side, whither the Damascenes resort after the work and business of the day to pass an hour over the coffee cup or the ever-acceptable water-pipe as they talk over the news of the day or the doings of the outer world as revealed to them through the Arabic or Turkish papers.

Would you investigate closer some of the most primitive and interesting doings of the Damascene, turn aside to the place where the famous Damascus curtains are made, and there in semi-darkness you will find dozens of lads and men engaged in weaving these requisites of the home on the most primitive of looms, and yet they are able to produce an article that will compete with anything from the most complete and up-to-date factory in Europe.

Or, would you see how thousands of bushels of flour and measures of oil are produced, you have only to turn aside into one of the many mills to see that instead of steam the patient camel is used to turn the mill whose stones crush the grain or bruise the berries or seeds from which different oils are extracted. Some will say, primitive, indeed; but the Damascene's reply would be that it is effective and inexpensive; and, where time is of little object, these are important items.

But the sights of Damascus are not all on the streets. For a good view of the



EXTERIOR OF THE GREAT MOSQUE: DAMASCUS

The north wall and entrance shown here are part of the former building, but the windows, which are tiny pieces of colored glass, have recently been added. Most worshipers enter by this door.

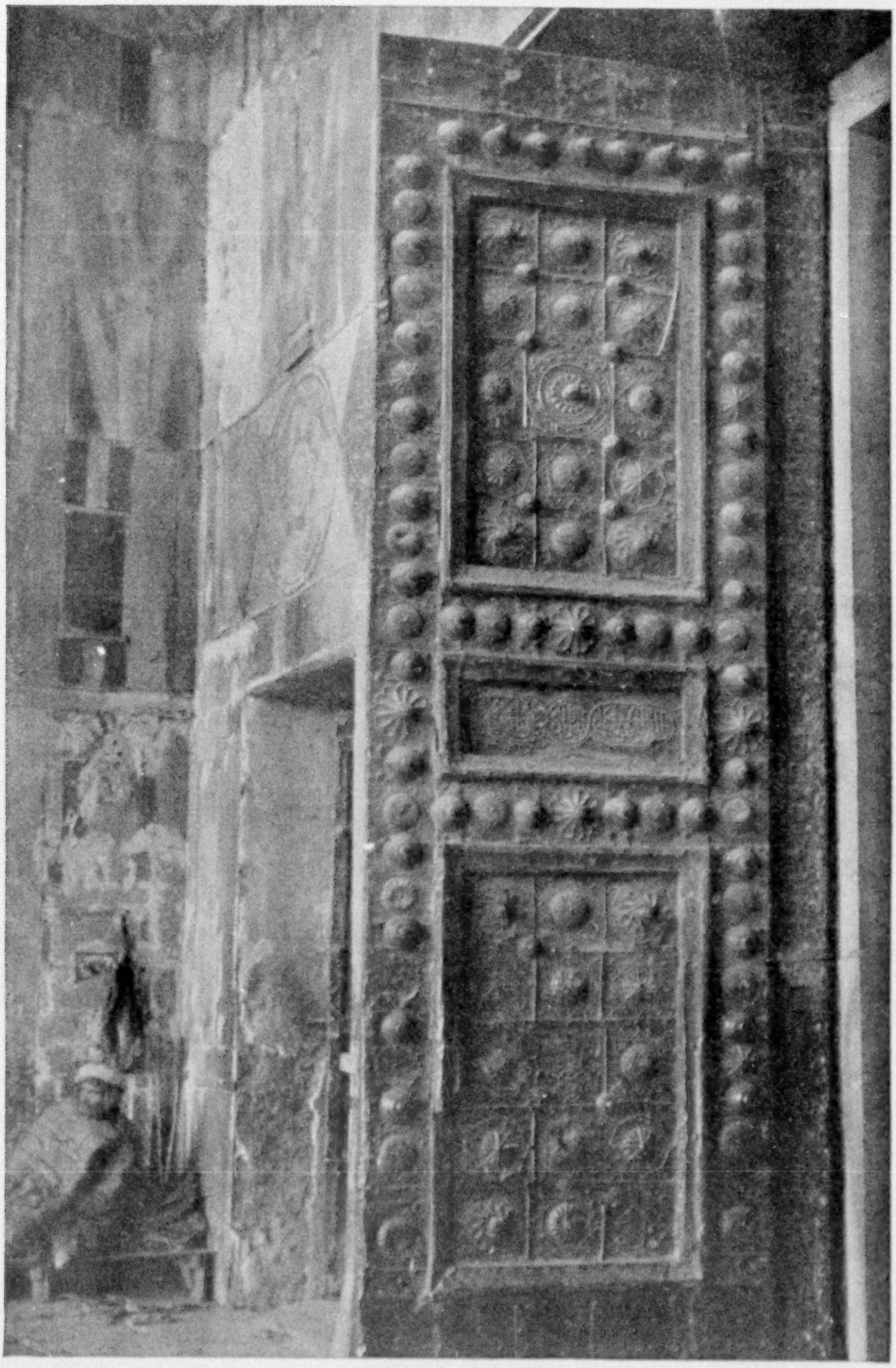
city itself you must get the favor of a minaret keeper, and have his permission to climb to the gallery of the minaret and from there look out over the roofs, courts, towers, and streets of the city beneath you. Be it said to the credit of the Damascene that, although he is a faithful follower of the "desert prophet," the fanaticism so often exhibited by Mohammedans is absent in him.

An interesting outlook of the city is obtained from a minaret near the west end of the street called "Straight." From this position one immediately appreciates how well that ancient thoroughfare deserves its name; for, as seen in the illustration, the street, which is roofed in, runs in a direct line across the city from west to east for about one and a half miles. This street still bears the same name as in the days of the Apostle Paul.

But the principal attraction of the city is the great mosque, which is located in the heart of the busy capital, and can only be reached through one of its many populous streets. This spacious resort for worship has recently been rebuilt, the funds being contributed from all parts of the Moslem world, for in 1893 the edifice had been almost entirely destroyed by fire.

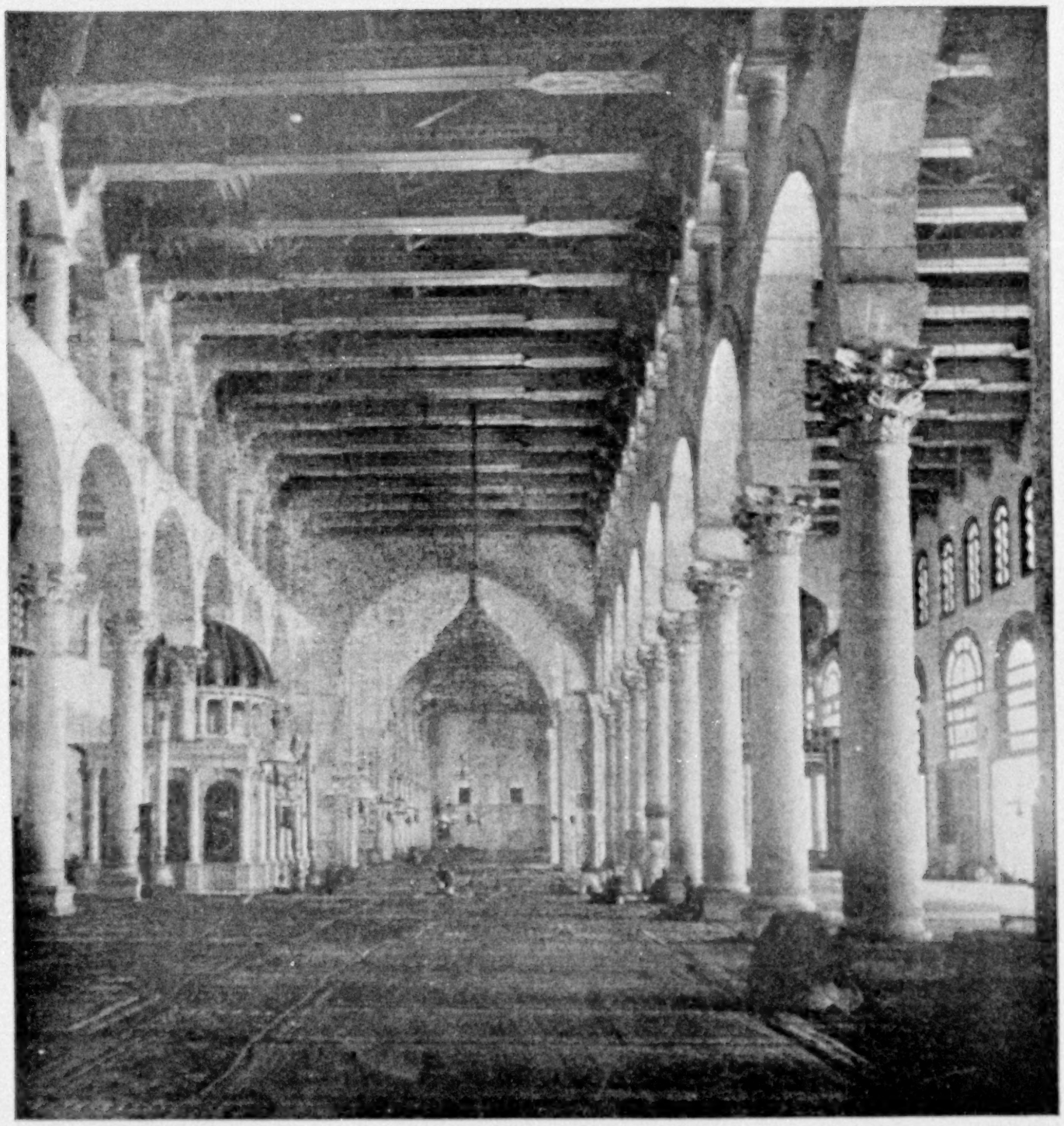
The mosque has had a varied experience, being at one time a heathen temple, then a Christian church, then held jointly by the Mohammedans and Christians and used as church and mosque at the same time, but since the eighth century the Mohammedans have had the sole use of it for their own purposes.

The outer court of the mosque is entered by three gateways, each guarded by massive bronze doors of great antiquity, and which were saved at the time



ANCIENT BRONZE DOOR TO THE GREAT MOSQUE

Without doubt it is hundreds of years old and was made when the Damascenes knew the art of working in bronze, an industry now lost in the Orient. The door is about 20 feet high

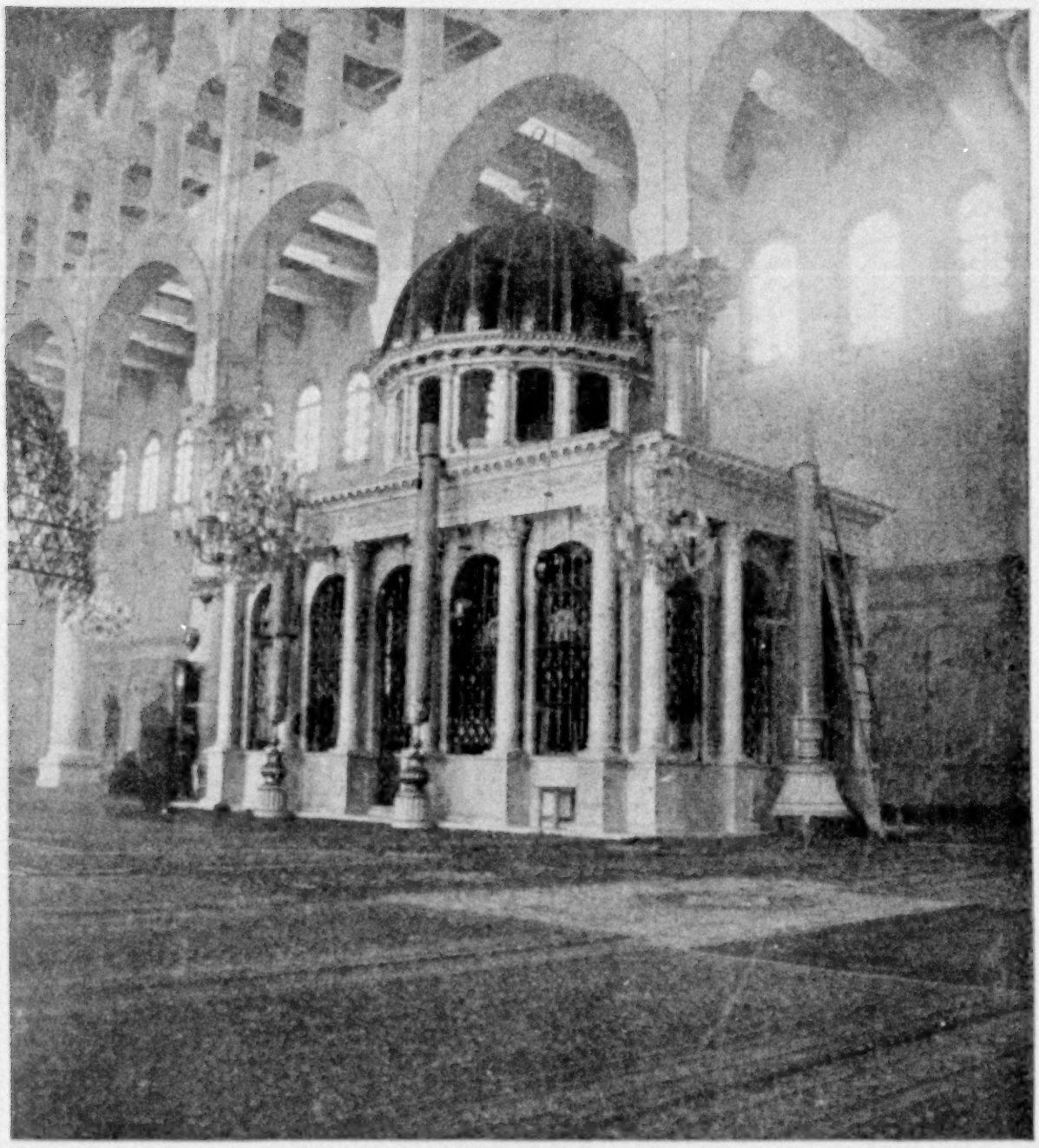


INTERIOR OF THE GREAT MOSQUE: DAMASCUS

The great place of worship for the Damascenes. Mohammedans from all parts of the Moslem world meet there. On Friday, when crowded with worshipers, the place is all too small. At any hour from sunrise until after sunset people may be seen going through their forms of prayer and worship. None are allowed in with their boots or shoes on. Note the rugs.

of the great fire. The workmanship of these doors is very fine, the detail showing that at some time there were those who were able to turn out work in bronze that will compete with anything of modern times. Because of the crowds that throng these entrances and the dark location they are in, it is difficult to secure anything like a good photograph of the gates, but the illustration will convey a fair idea of them.

We will enter by one of the doors on the north, and thus avoid giving offense by turning our backs on Mecca. The



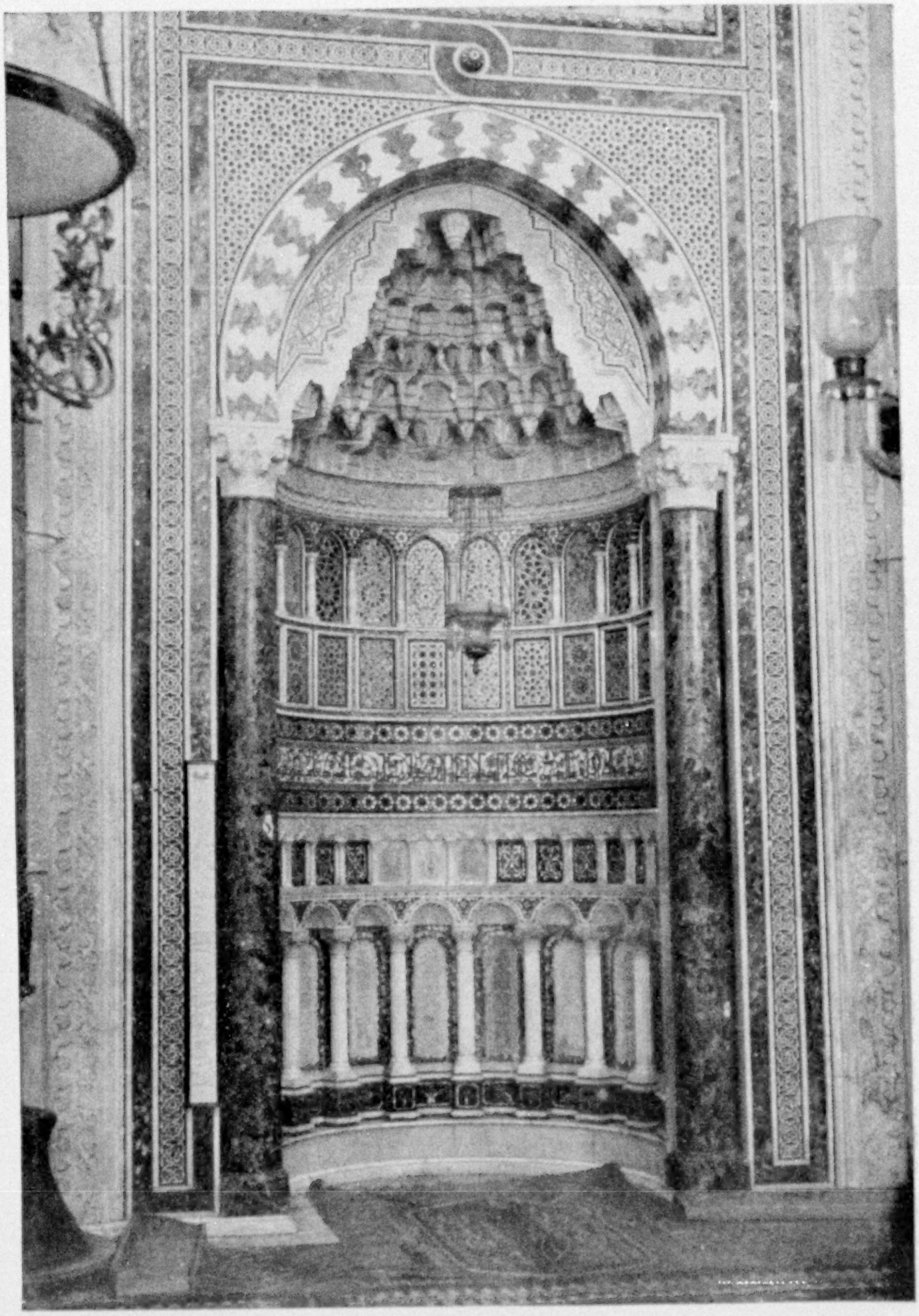
SHRINE TO JOHN THE BAPTIST IN THE GREAT MOSQUE AT DAMASCUS

The most costly shrine in Damascus, supposed to cover the place where the head of John the Baptist was interred, after being unearthed by one of the Saracen heroes of Damascus. It is revered alike by Christians and Mohammedans, but the latter claim the privilege of keeping it in good repair. Note the rugs.

interior, which is quite 300 feet long, has a very imposing appearance, the numerous huge columns on either side adding materially to its grandeur. These columns, each 20 feet high, were all quarried in and brought from the adjacent mountains of Lebanon, and, for finish and workmanship, speak well for the ability of the Damascus stone mason. The floor of the mosque is usually covered with costly and beautiful rugs, the gifts of rich Mohammedans from all parts of the Orient.

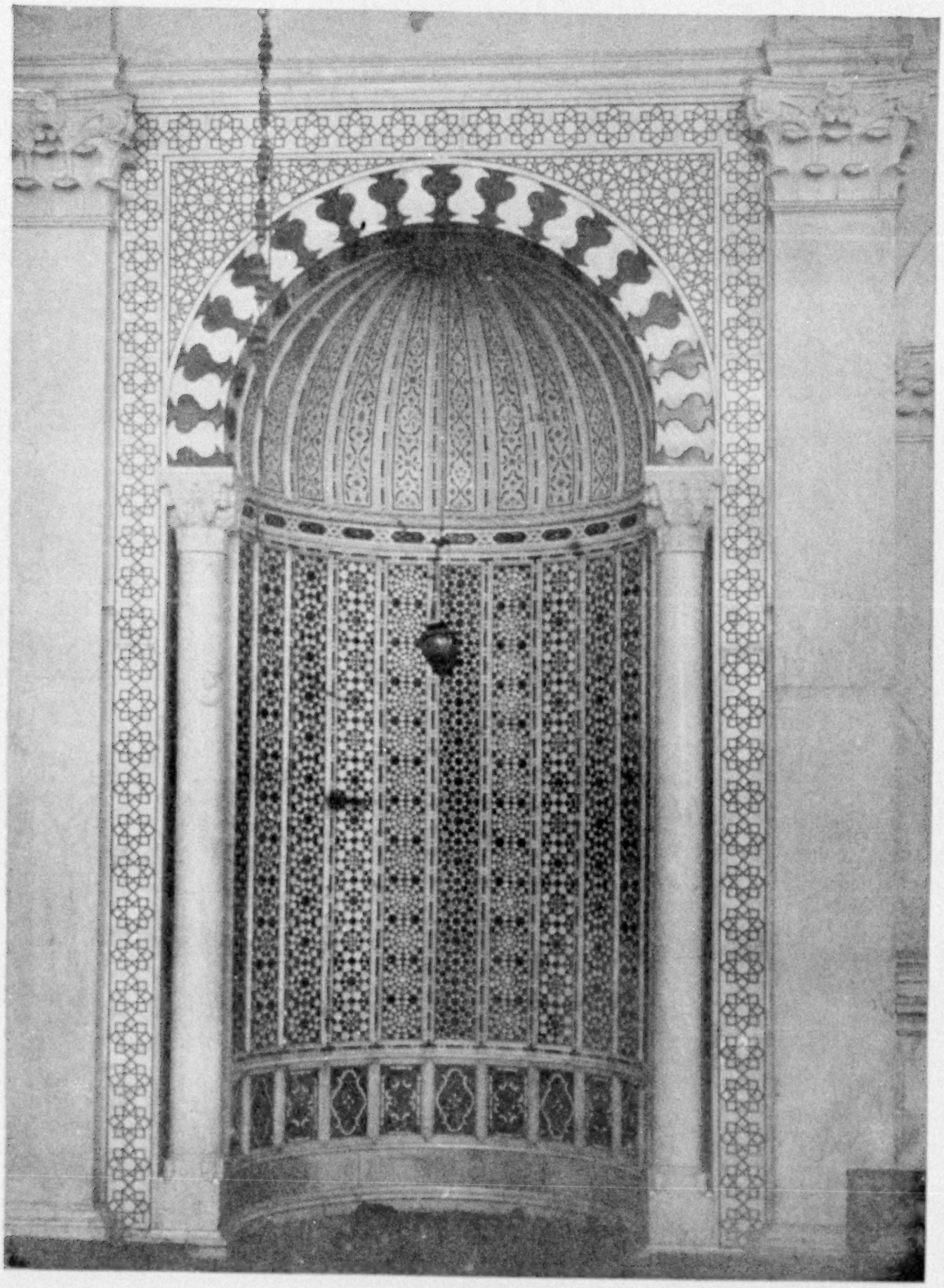
On entering this magnificent place of worship the eye is at once attracted by an imposing and elaborately decorated structure that has a place between two of the massive columns near the center of the building. On inquiry you will be told that it is the tomb of John the Baptist's head, a shrine respected alike by Mohammedans and Christians.

XUM



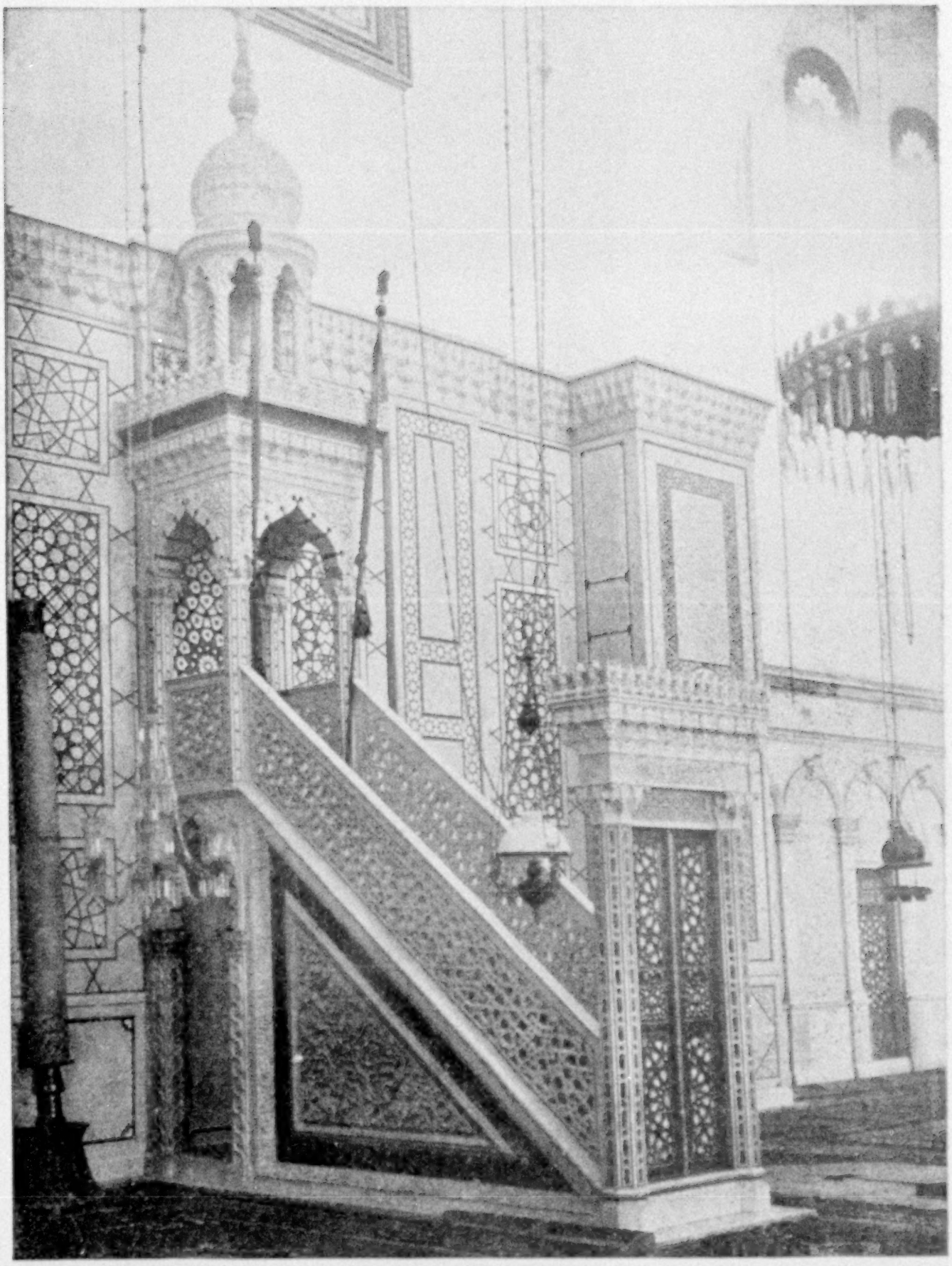
DAMASCUS' MASTERPIECE IN MODERN MOSAIC

This elegant and delicate piece of work took many months to complete and is the admiration, pride, and boast of Damascenes. Across the center, worked in tiny stones, are some verses from the Koran, so neatly joined as to give the appearance of handwriting. The side columns are red granite brought from Upper Egypt.



MODERN MOSAIC PRAYER NICHE

This exquisite production of a Damascus workman bears silent testimony to the sort of work the Syrian is able to do. The many pieces of colored stone and glass were gathered from different parts of Europe and Asia. The entire expense was borne by a rich citizen of the city.



ONE OF THE MOST COSTLY PULPITS IN THE WORLD

It is built entirely of marble, exquisitely carved and joined. Once a week the head of the religion ascends the stairs and from beneath the cupola preaches the weekly sermon to the thousands assembled before him. The pulpit was a thank-offering from one of the rich citizens of Damascus. Note the modern kerosene hanging lamp.

The local tradition says that after the execution of the Messiah's forerunner his head was sent to Damascus, then the capital of the district over which Herod had jurisdiction, so that his superior officer might see that the deed had really been done and one supposed inciter to rebellion disposed of. When the Saracen conqueror Khalid captured Damascus and was searching the church for treasure, he came across this revered relic and caused it to be interred and covered by a fine structure, which has been carefully preserved ever since. The dome of this monument is covered with green, the religious color of the Mohammedans, surmounted with the star and crescent. The sides, which are cagelike in appearance, are of brass rods and filagree-work of very exquisite design. The fact of this shrine being in the mosque accounts for the laxity regarding the entrance of Christians as compared with mosques in other Mohammedan cities.

In the south wall of the building are two exquisite pieces of modern mosaic-work of which the Damascenes are justly proud.

These form prayer niches toward which the faithful turn when engaging in their devotions, as they face toward Mecca, their holy city. The niches, which are about 10 feet high, are made up of hundreds of tiny pieces of colored marble, glass, granite, and other stones gathered from all parts of Europe and Asia, and are the work of men resident in the city. Every one of the tiny columns seen in the work is delicately carved and must have required infinite patience and ingenuity.

Both niches are the gifts of rich Moslems as thank-offerings to God for a safe return from the long and trying pilgrimage to Mecca, some 800 miles distant across the Arabian desert.

West of these modern mosaics is another fine piece of work in the shape of a massive pulpit worked and carved entirely in white marble, brought from the quarries of Italy but worked in Damascus.

From this pulpit the weekly sermon is preached to the crowds who have gathered for the Friday service, that day being equivalent to the Western Sunday. This delicately wrought piece of filagree-work in marble is also a gift to the mosque in return for blessings received.

A visit to the mosque is usually concluded by ascending the minaret on the southwest side of the building, the only one that survived the fire already referred to. The minaret is of pure Arabian workmanship and is a wonder of skill and design. In shape it is octagonal, and has three galleries, one above the other, tapering toward the top and ending with a ball surmounted with the crescent. Unlike the other two minarets, this one is built of different-colored stones, which from a distance give it a very pleasing appearance.

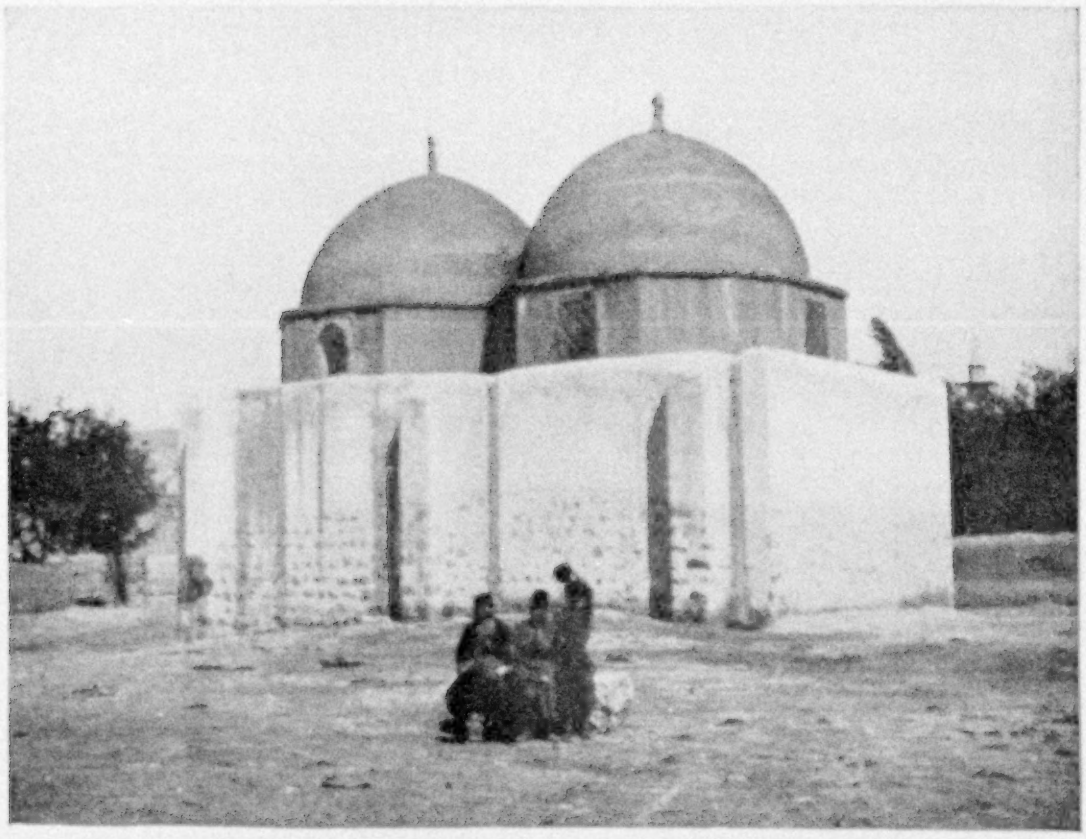
From the gallery a magnificent view of the city is to be had. The main bazaars and streets are prominent because of the semicircular roofs over them; the many tiny domes with glass windows locate the numerous Turkish baths of the city, which are well patronized by the inhabitants; the well-preserved Crusading castle in the center of Damascus denotes the military headquarters of the troops, while the spots of green interspersed about the city tell of many a shady courtyard, fragrant with flowers and trees, continually watered from the fountain that plays in its midst.

Beyond the city may be seen barrenness, fertility, mountain, and plain, while the many-miled circle of green that encompasses the town is a sight never to be forgotten. It is not to be wandered at that the Damascenes are proud of their city and think there is no other like it, and well they may, for its equal has yet to be found.

Damascus is a city of sacred shrines, for many worthy and brave men have been interred there. From a military point of view the tomb of Saladin, the great hero of the Saracens, is the most important in the city. It is to be found in a small mausoleum attached to the great mosque. A glass case at the head of the marble sarcophagus contains a

GENERAL VIEW OF DAMASCUS

Some idea of the length of the bazaars may be gathered from the long line running across the illustration which shows the roof of part of one of the main streets. The quadrangle in the foreground is one of the many two-storied caravansaries in which the caravans find shelter and merchandise is stored.



TYPICAL SACRED SHRINE

Scores such as this may be seen in and around the city of Damascus. They are much revered by the natives

golden wreath placed there by the present Kaiser during his visit to the city. Great and deep offense was given to the Damascenes because worked into the wreath was a cross. The Mohammedans petitioned Constantinople for its removal, but the late Sultan ordered it to remain, as it was put in place by the German Emperor.

To the religiously inclined the tomb of Fatima, the only child and daughter of Mohammed, is the most important in the city, and is to be found among the thousands of graves at the north end of the long Meidan. It is inclosed by an iron cage, and is the constant care of scores of women.

Beibars and his son, both great heroes of the Saracen period, have their tombs in Damascus, and are visited by thousands of men yearly. In many of the mausoleums of these worthies are stored heaps of valuable manuscripts which, if searched and translated, might add valuable information to the history of the Orient.

Damascus as a center for trade is probably unequaled in the Turkish Empire. From its forges all kinds of iron-work are carried into Central Arabia; from its many looms clothing and curtains of silk and cotton are transported to all parts of Asia and Europe; from its bazaars saddles, brass-work, and confectionery are taken to Constantinople, Bagdad, and the large cities of the East. Its apricots are parboiled and then exported by the thousands of cans to France, and from its silk-winding machines thousands of skeins find their way to all parts of the civilized world.

To its many merchants and skilled workmen come by steam and camel-train the raw products of the world—mother-of-pearl from the Persian Gulf; ebony, mahogany, and precious woods from India; spices from Yemen and Persia; rugs and carpets from Armenia and Mesopotamia; leather from Europe; iron, brass, and steel from England; paper, cloth, cotton goods, and sundries from Germany, and petroleum for light-

ing purposes from Russia, with a limited supply from America.

The fertile Hauran and the extensive plains of Moab furnish the wheat and barley necessary for such a large city. The grain is brought thither on camels' backs or by the Mecca railway. This Mecca railroad has caused Jerusalem to suffer considerably, because the large supplies of wheat and native produce which the Holy City originally obtained east of the Jordan are now all sent by rail to Damascus.

There is no doubt that Damascus, as the terminus of the Aleppo, Haifa, Beirut, and Mecca railroads, is bound ere long to become the hub of the East. To and from it will radiate trade and commerce such as it has not known in all its history.

SURVEYS IN THE PHILIPPINES

ALTHOUGH Spain created a hydrographic commission for the Philippines as early as 1834, no systematic surveys were conducted by it, the Spanish vessels being too much occupied in the suppression of piracy and in performing other police duty. They found time, however, to make several chronometric expeditions for determining longitudes and to make geographic explorations along the coasts. The resulting charts are to be regarded as mere reconnaissances, with the exception of a few detailed surveys in detached localities. These were supplemented by a British survey of the west coast of Palawan, between 1850-'54, and other exploratory surveys by the British.

It was not until the end of 1900 that the United States Coast and Geodetic Survey began to extend its activities to the Philippine Archipelago, and to conduct a systematic hydrographic and topographic survey of the shores, based on accurate and continuous triangulation, by means of which all the surveys have been properly coördinated. The extension of the telegraph and cable lines offered the desired opportunity for the precise longitude determinations which were made, and which, in connection with latitude and azimuth observations, completed the required data for fixing the triangulation on the map of the world.

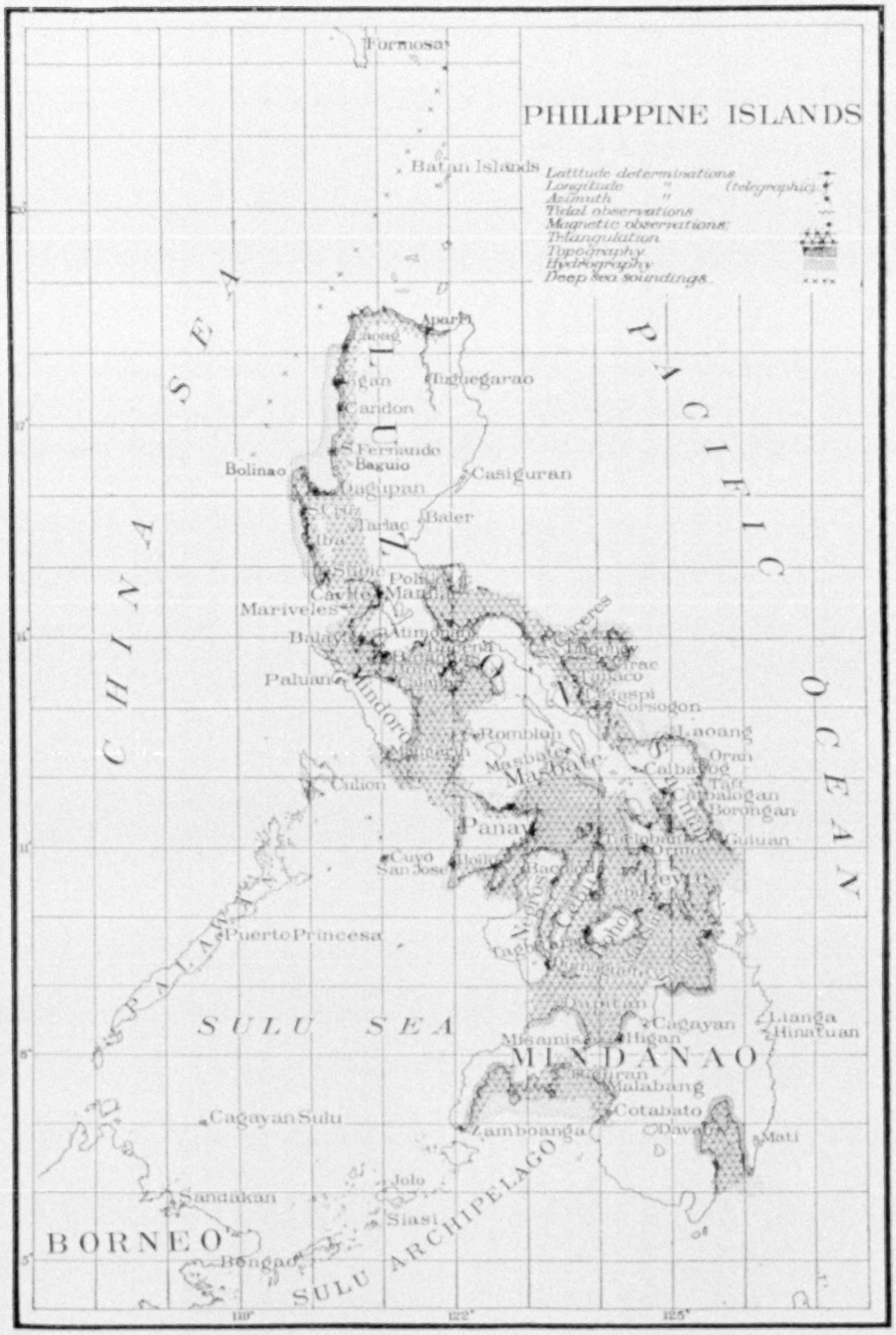
In addition to its immediate purpose, this triangulation forms the basis for the extension of cadastral and topographic surveys into the interior, a work which has been taken in hand by the Philippine government. The latter has contributed about $70,000 a year to the work of the Coast and Geodetic Survey, in addition to the sums appropriated by Congress.

The most pressing needs of the mariner have been met by the publication of about 120 charts by the Coast and Geodetic Survey, the great majority of which are based on its own work. The gratifying progress made is shown on the accompanying sketch-map, which represents the condition of the work at the end of June, 1910, and which indicates that a great contribution has been made to accurate cartography.

P. A. WELKER,
U. S. Coast and Geodetic Survey.

ACKNOWLEDGMENT

THROUGH inadvertence the authorship of the short article, "The Man Without the Hoe," published in the last number of the magazine, was not credited to Mr. J. Grinnell, of the University of California, Berkeley, California. The two illustrations accompanying the paper were from photographs by Mr. Grinnell, and should have been credited to him instead of to "J. Griffin."



OUTLINE MAP OF THE PHILIPPINE ISLANDS, SHOWING THE PROGRESS OF THE TOPOGRAPHIC AND HYDROGRAPHIC SURVEY OF THE ISLANDS BY THE U. S. COAST AND GEODETIC SURVEY

DUMBOY, THE NATIONAL DISH OF LIBERIA

By G. N. Collins

TO attempt the description of a gastronomic novelty is like attempting to describe a landscape. The constituent parts can be described and the manner in which they are combined, but it requires something more than accurate description to reproduce the sensation of the original. To those who have actually witnessed a particular view, even a feeble description may suffice to recall the original impression. It is the same with tastes and odors; but there are few who have known the pleasures of Liberian dumboy.

MORTAR AND PESTLE FOR BEATING DUMBOY

To these the mere name will recall a picture of some little native town at sunset, surrounded by the somber tropical forest, where the stillness is broken only by the appetizing crack of the pestle. The thought of a chicken dumboy with "whaney" and "kiffy" seed will obliterate all impressions of the steaming heat and the mad fevers, and leave only a desire to taste again this most fascinating dish. To the uninitiated I fear that any description I can give will only leave the impression of a barbarous concoction, and may perhaps arouse disgust.

The principal ingredient of dumboy is cassava, or "cassada," as it is called in Liberia. The edible roots of this plant, known botanically as *Manihot utilissimum*, are the source of tapioca and some of the forms of sago. There are a great many varieties of cassava, classified usually as either "bitter" or "sweet." The roots of the "bitter" sorts contain considerable quantities of prussic acid, and are poisonous unless cooked. There seem to be no visible characters distinguishing the sweet from the bitter, and recent investigations indicate that the poisonous ingredient of the bitter varieties is developed only under certain conditions of soil and climate. All the varieties in Liberia are sweet, and may be eaten raw with impunity.

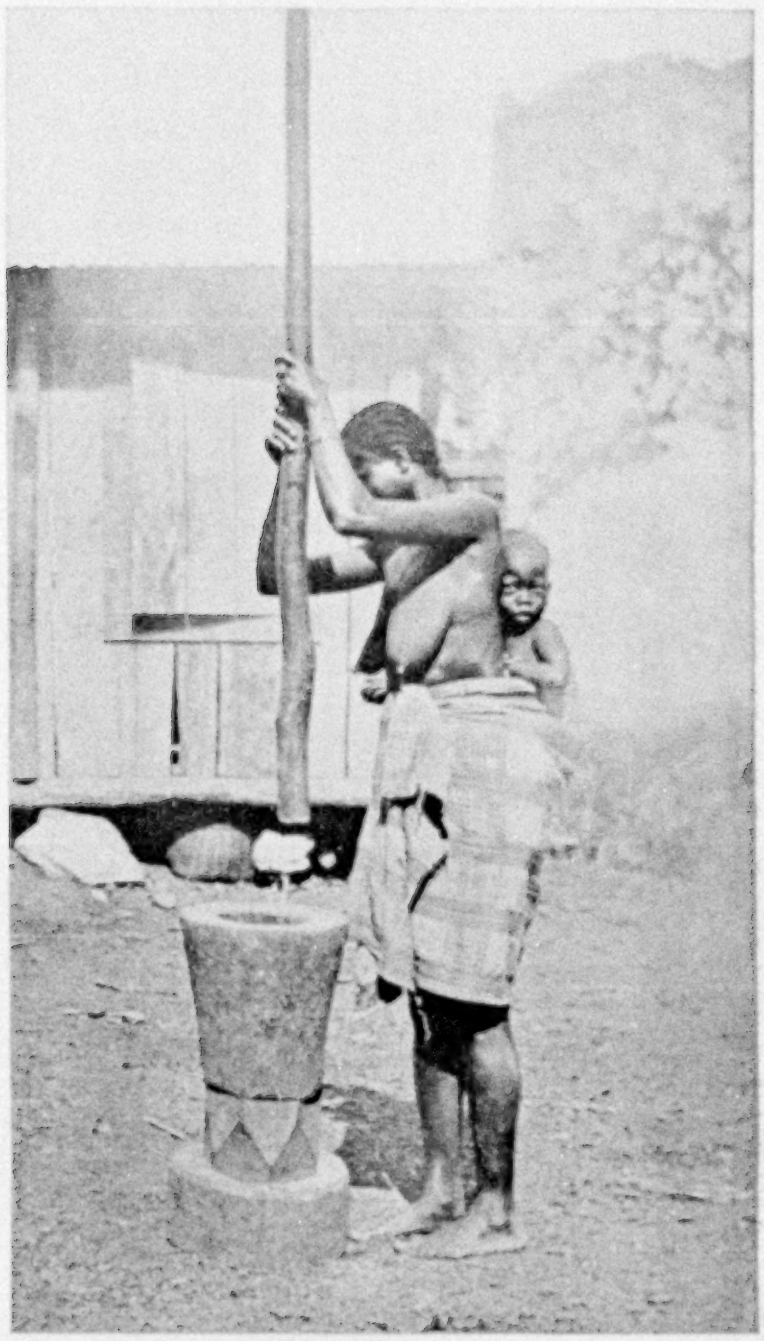
To prepare the roots of cassava for dumboy they are peeled, boiled, and all fibers from the center are removed. The cooked roots are then placed in a large wooden mortar and beaten with a heavy pestle (see figure on page 85). This beating requires considerable skill and experience. In the hands of a novice the pestle sticks to the dumboy, and the result is a lumpy and inedible mass. To prevent the sticking, the pestle is dipped

in water; but unless the water is used very sparingly the dumboy becomes sodden.

The beating requires about three quarters of an hour, and is hard work. As the beaten mass becomes homogeneous the pestle produces a loud crack each time it is drawn from the mortar. These sharp reports can be heard for long distances through the forest, and are a very welcome sound at the end of a day's journey.

When the dumboy reaches this stage the operator may rest without injury to the quality of the product; but, once the beating is carried past this point, it must be rapidly completed and the dumboy eaten at once. If the natives are to be believed, it is actually dangerous to eat dumboy that has stood for more than a few minutes after it is beaten. If allowed to stand long it becomes very hard, broken pieces of dried dumboy being a favorite kind of shot for use in the long muzzle-loading guns of the natives. A casing of dumboy is also used to stiffen the leather sheaths of the native swords and knives.

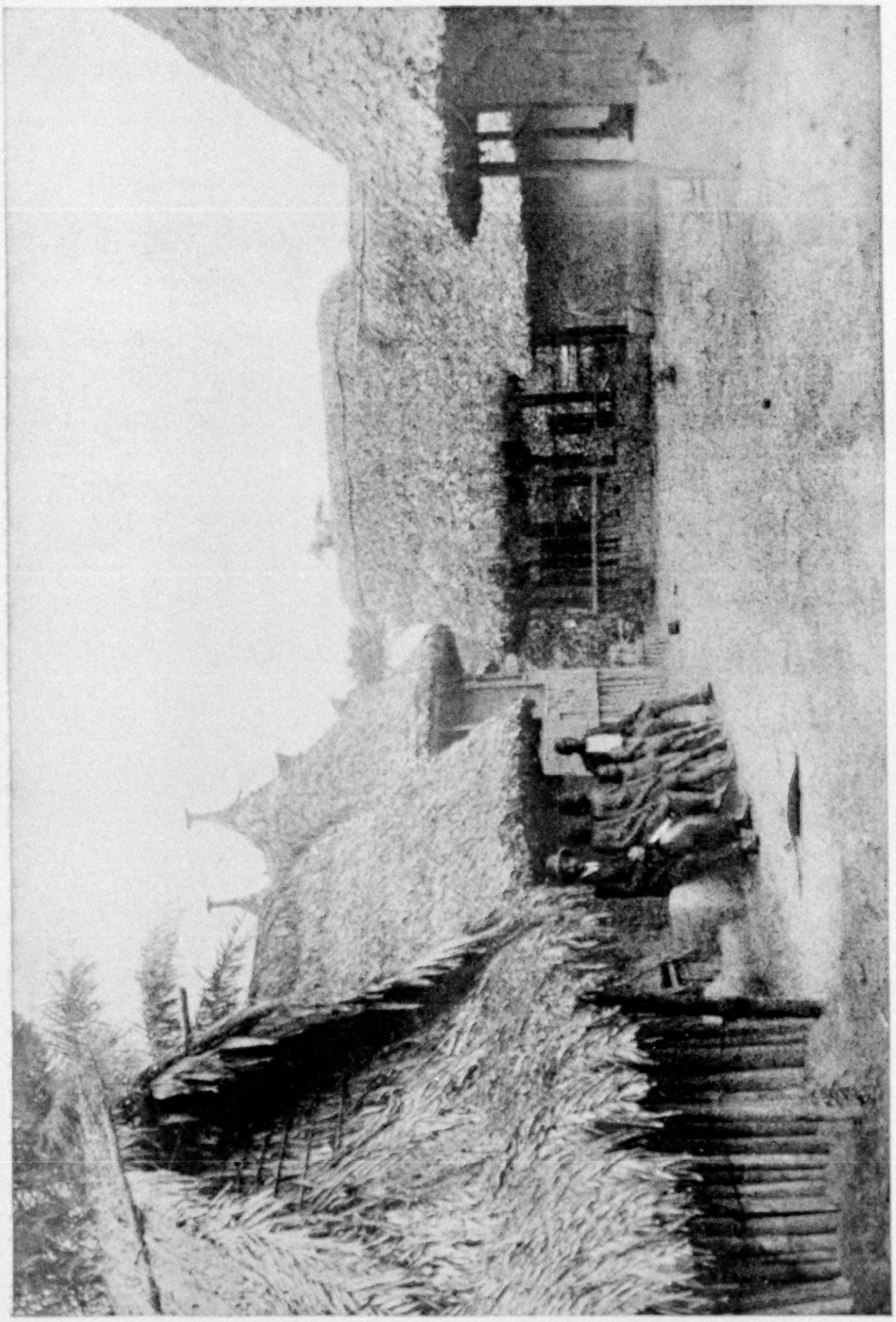
As soon as the beating is finished the dumboy is taken from the mortar and placed in shallow wooden bowls (see figure on page 88). The native method is to place the entire quantity in one large bowl from which all the partakers eat. If divided, the customary portion for each person is a piece about the size and shape of an ordinary loaf of bread.



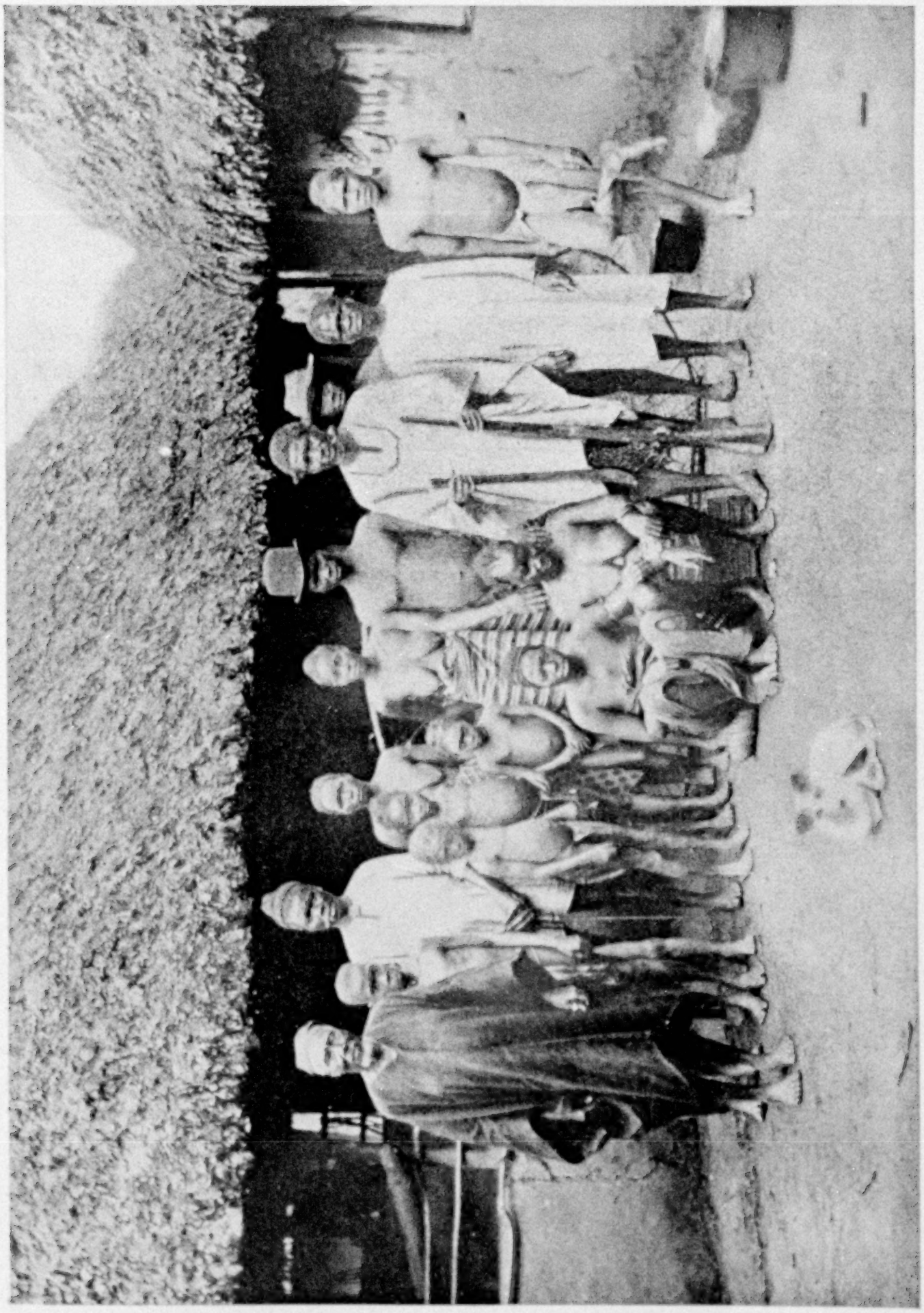
POUNDING THE CASSAVA TO MAKE THE DUMBOY

A soup which has been prepared while the dumboy was being beaten is now poured into each bowl. There is great variety in this soup, which imparts most of the taste to the dish. There is always a stock of some form of meat. This may be either chicken, deer, fish, monkey, or even canned beef. To this are added as many vegetables as can be obtained, the choice depending upon the season.

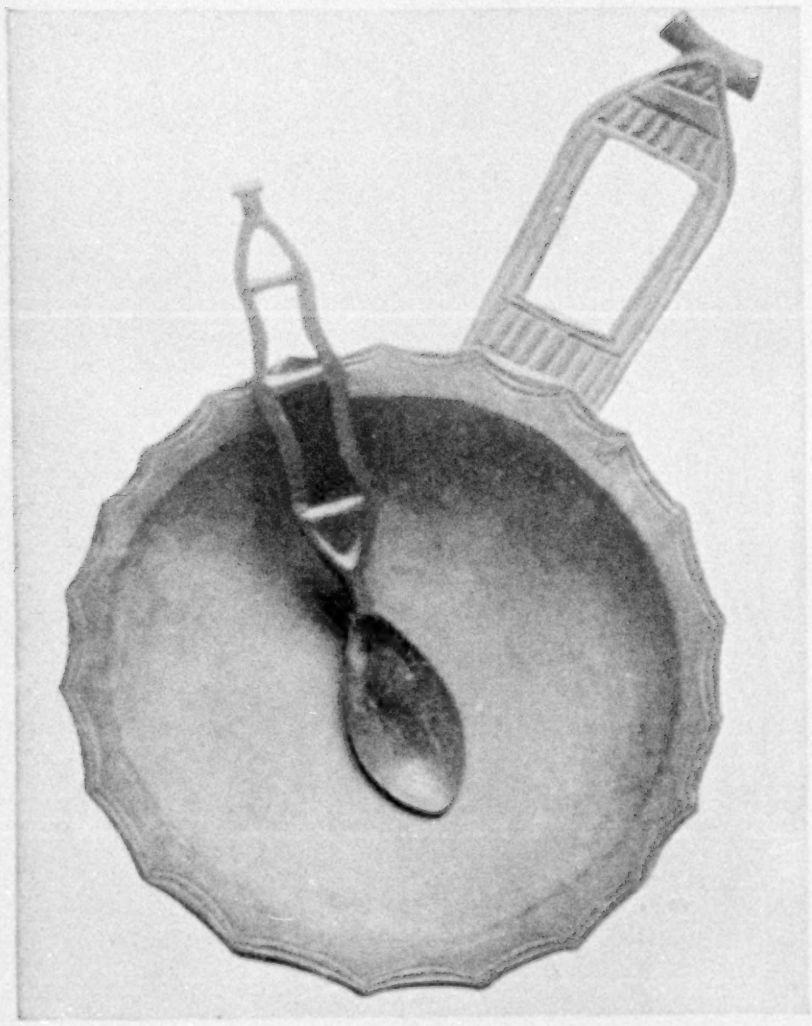
The list includes sweet potatoes, breadfruit, eddoes (the Liberian name for yautia), and, if possible, "whaney." Whaney is the juice squeezed from the pulp that surrounds the seed of the oil palm. It is not attractive in appearance, but imparts a rich flavor to the soup. In any case, parched "kiffy," or "beni," seed must be added as a condiment. Kiffy is a small melon-like plant, the seed of which are parched and finely ground. Beni (*Sesamum orientale*) is the plant commonly known as sesame. The seeds are treated in the same way as kiffy seed, and have very much the same taste. The parched seeds of either of these plants is a delightful condiment.



COLAH TOWN IN THE INTERIOR OF LIBERIA



GROUP OF GOLAH WOMEN IN THE INTERIOR OF LIBERIA, WHERE DUMBOY IS THE FAVORITE FOOD



WOODEN BOWL AND SPOON USED IN EATING DUMBOY

As soon as the soup is added the dumboy is ready to be eaten; and, while the ingredients are somewhat bizarre, the method of eating the dish strikes the traveler as even more startling. The mass of dumboy, which can best be described as a sticky dough, will adhere instantly to anything dry, but is readily cut with a wooden spoon if the spoon is kept moist with the soup. An incredibly large piece is cut off with the moistened spoon, taken up with a quantity of the soup, and swallowed whole. No one thinks of chewing it, and it is customary to caution the novice by tales of the frightful operation necessary to separate the jaws once the teeth are buried in the sticky mass.

As might be expected, few Europeans like dumboy on first acquaintance; and, with some, the initial distaste prevents further experiments. If a second or third attempt is made, however, and the dish has been properly prepared, the habit is usually formed, and before long every night spent in the bush without a meal of dumboy is counted a privation. Among the white residents of Liberia, fondness for this dish amounts almost to a cult. It is regarded as a sort of guaranty that one's tenderfoot days are over.

While cassava is a staple food throughout West Africa, dumboy seems to be peculiarly Liberian. The dish in no way resembles the "fou fou" of the neighboring colony of Sierra Leone, though made of the same material. It must be unknown in the parts of Africa familiar to Sir Harry Johnston, for the account given in his work on Liberia is erroneous. A dumboy prepared in the way described by him would be quite inedible.*

The great diversity in the methods of preparing cassava for food that obtains among the tribes of West Africa would seem to argue against the generally accepted belief that cassava was unknown in Africa until after the discovery of America by Columbus. There can be no doubt that the plant is of American origin; but, if introduced after the time of Columbus, it must have been taken up with marvelous rapidity, and the natives must have evinced an ingenuity in inventing new methods of preparing the food in striking contrast to their present conservatism.

* Johnston, Harry, Liberia, II, p. 990.

NOTES ON OMAN

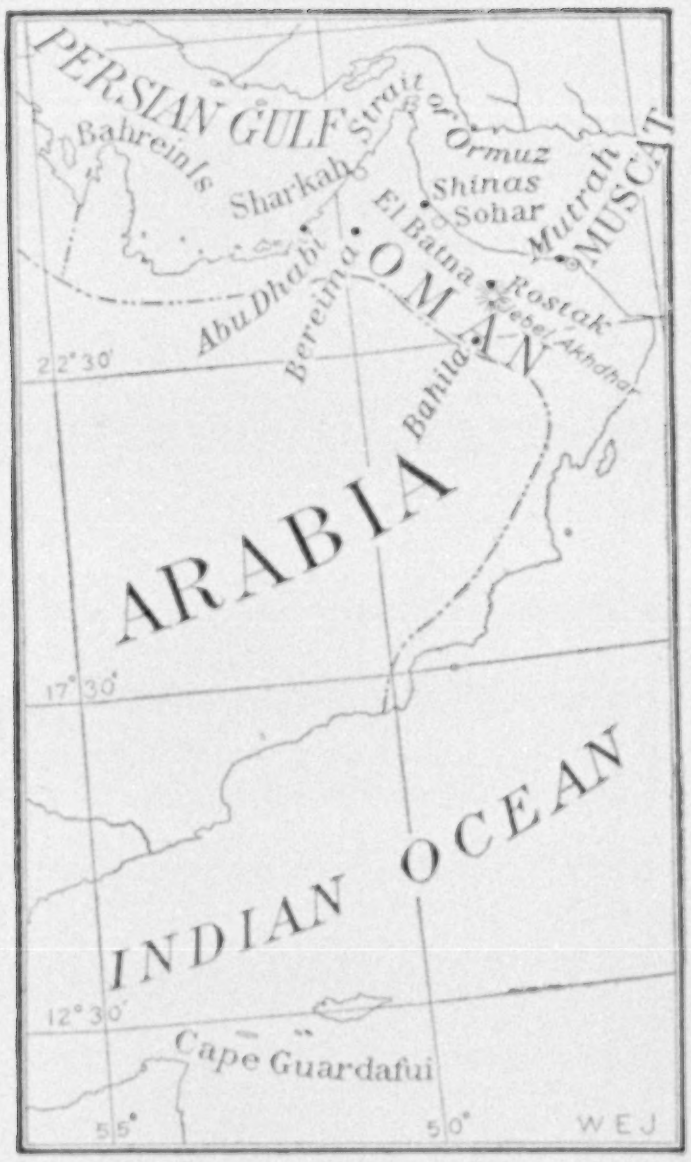
By Rev. S. M. Zwemer, Bahrein, on the Persian Gulf

AMONG the most unknown regions of the earth geographically is the Arabian Peninsula, and one of its least-known provinces is Oman. Historically, politically, and geographically Oman has always been isolated from the rest of Arabia. Ever since the days of the caliphate, and as far as outside communication with other Arabs is concerned, Oman was practically an island, with the sea on two sides and the desert on the other. The people are, therefore, even more primitive in their habits than the Arabs generally, and only recently have other towns than Muscat, the present capital, opened their eyes to the wide world.

The coast line of Oman extends for about a thousand miles, from the Strait of Ormuz, southeast and southwest; the province has an area of 82,000 square miles and a population estimated at 800,000 by the Statesmen's Year Book, but by Colonel Miles, who has seen more of the interior than any other recent traveler, at over 1,000,000. The capital, Muscat, and the adjacent town of Mutrah have together about 25,000 inhabitants. The ancient capital, Rostak, has declined in importance since Muscat was occupied by the Portuguese, from 1508 to the middle of the seventeenth century.

Ahmed bin Sa'eed, originally from Yemen, captured Muscat and was elected Imam of Oman in 1741. His family have since been the rulers of this part of Arabia, and the present Sultan came to the throne on June 4, 1888. At the beginning of the last century the power of the Imams of Oman extended over a large part of Arabia, the islands in the Persian Gulf, a part of the Pirate Coast, and a long strip of the African coast south of Cape Guardafui, including Socotra and Zanzibar. At this time the slave trade was flourishing, and it was the Arabs of Oman who explored the great interior of Africa long before the days of Speke and Livingstone. On the death of Sultan Sa'eed in 1856 two rival sons divided the government, one becoming the Sultan of Zanzibar and the other of Muscat.

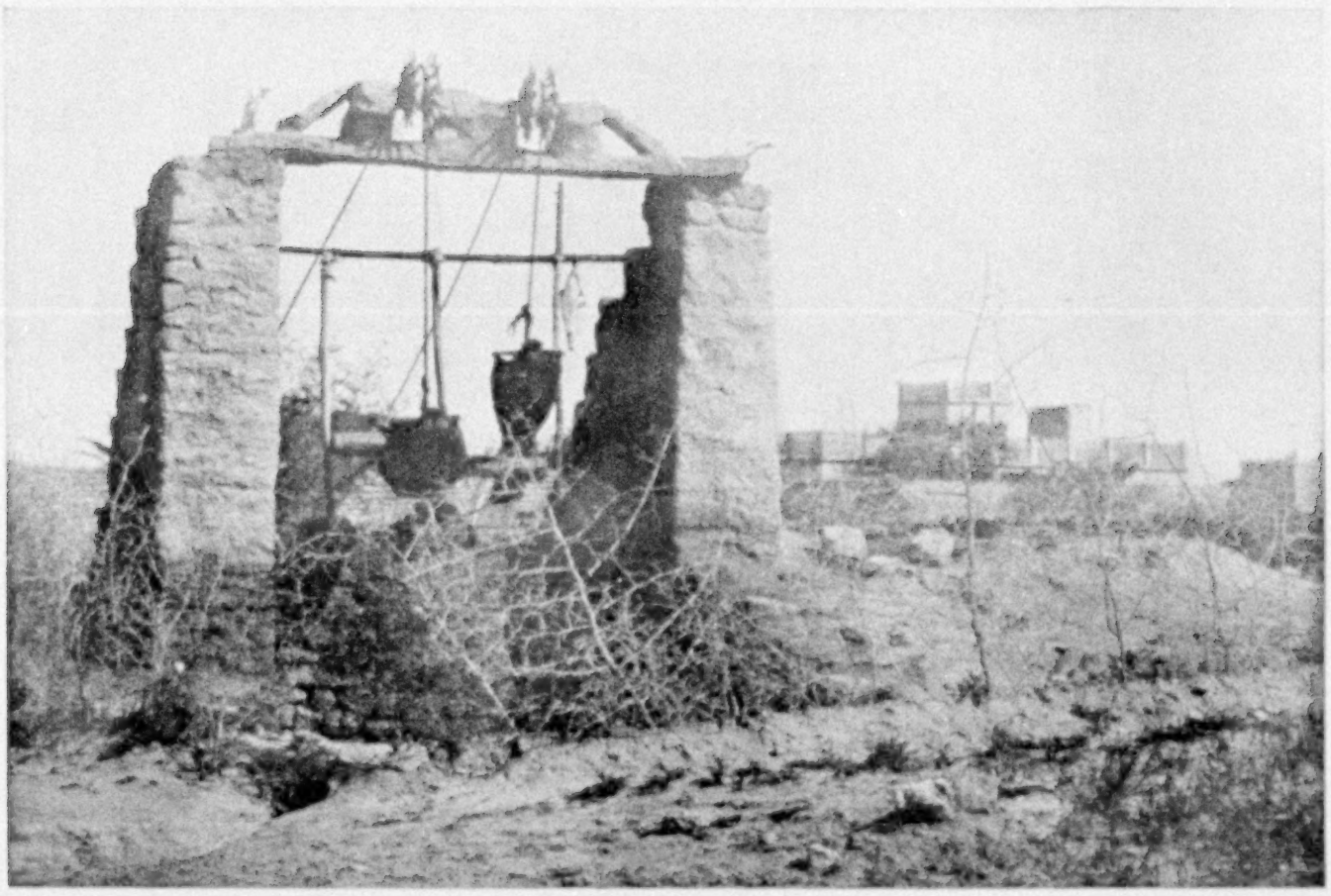
The present Sultan has for many years been under the protection of the government of India, and Oman is practically a native state like other states in India. A British consul and political agent resides at Muscat, and although the Sultan's revenue amounts to about $250,000 his authority does not extend far inland, and there is little security for



OUTLINE MAP OF OMAN

THE SULTAN SAYYID FEYSIL BIN TURKI, THE PRESENT RULER OF OMAN, WHO SUCCEEDED HIS FATHER JUNE 4, 1888

He is a progressive ruler, and the closest relations have existed for years between the government of India and his sultanate



ANCIENT WELL ON THE ROAD FROM MUSCAT INLAND

Showing the primitive method of drawing water by bullocks or donkeys in large skins for purposes of irrigation

life and property when the tribes are at war. In recent years trade has greatly increased, and there has been considerable agricultural development. The mineral resources of the province are not well known, and a great portion of it is still largely unexplored.

Some years ago it was my privilege to cross from Abu Dhabi, on the Pirate Coast, through Bereima to Sohar, and also from Sharkah, on the Pirate Coast, to Shinas, in both cases traveling along the coast from Sohar to Muscat.

The Pirate Coast was formerly noted for the savage ferocity and fanaticism of its inhabitants. Sir John Malcolm wrote fifty years ago concerning the people: "Their occupation is piracy and their delight murder; they are monsters."

Thanks to English commerce and gunboats, these fanatic Arabs have become tamed. Most of them have given up piracy and turned to pearl-diving for a livelihood. Their black tents and rude dwellings have made room for four important towns. As the slave trade has always flourished until recent years, a large part of the population of Oman is of negro descent, and at least four distinct African languages are spoken in the bazaars of Muscat and among the slaves in the interior. I quote a paragraph from the account of my journey:

"We heard on every side that traveling in the interior of Oman was safe, so, after bargaining with camel-drivers, we secured two companions and five camels to take us to Sohar for the sum of twenty *rials*, or Arabian dollars. At 9 p. m. on May 20 we left, and, after a short rest at midnight to water the camels, marched until 9 o'clock the next day. By going as much as possible by star-light to avoid the heat, and resting during the day under some scraggy acacia tree or in the shadow of a Bedouin

ONE OF THE CASTLES THAT GUARD MUSCAT AGAINST BEDOUIN INVASION FROM THE INTERIOR: THE SULTAN'S FLAG IS FLYING FROM THE RAMPARTS

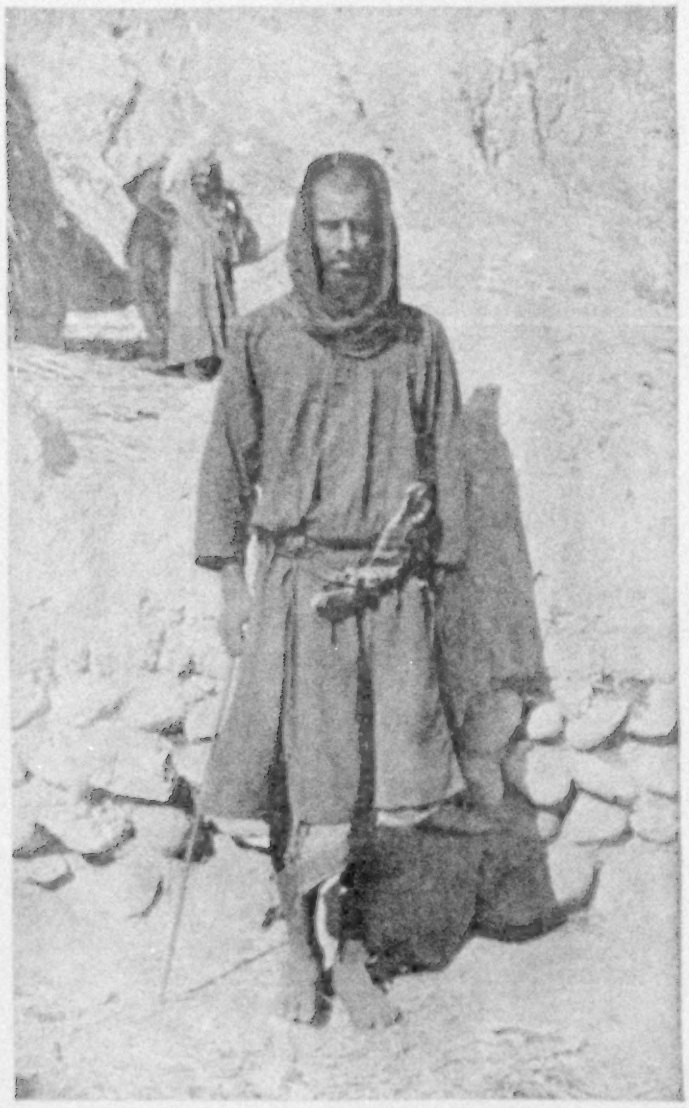
fort, we completed the distance of ninety-odd miles in a little over four days. A large part of the way we took was desert, with no villages or even nomad booths; the more usual route by Wady Hom being a little unsafe, we followed Wady Hitta.

"On the second day we passed villages and cultivated fields; that night we slept in the bed of the wady, surrounded by thousands of sheep and goats, driven in by Bedouin lasses from their mountain pastures. Even among these shepherds we found readers, and the colporteur sold books wherever the camels halted long enough to strike a bargain. It was late on Wednesday, May 23, that we entered the narrow pass of Hitta. Our guides preceded, mounted, but with rifles loaded and cocked; then followed the baggage camel, to which mine was 'towed,' and in similar fashion my companion on the milch camel, followed by its two colts.

"We were not troubled with the heat at night, but during the day it was intense, and it was refreshing to come to an oasis (common in this part of Oman), where water burst from a big spring and trees and flowers grew in luxury. In the mountainous parts of Oman the roads run almost invariably along the wady beds; sometimes these are sandy watercourses; again deep, rocky ravines or broad, fertile valleys. Vegetation generally is tolerably abundant. Tamarisks, oleanders, euphorbias, and acacias are the most common trees and shrubs.

"Where the country appears arid and sterile we were surprised to find a considerable population of shepherds and goatherds. Their dwellings are mere oval shanties constructed of boulders or rocks, and they subsist on their flocks. In the fertile valleys the population always centers in villages, and scarcely ever is a dwelling found at any distance from this common center. Here often are the fresh-water wells with the watch-tower to protect them.

"Just at the top of the pass of Hitta is the village 'Ajeeb, rightly named 'wonderful.' The view down the mountains



NATIVE OF THE HILL COUNTRY OF OMAN

over the fertile stretch of coast called El Batna and out over the boundless Indian Ocean was grand. We descended to the sea, and the turbulent mountain stream, so cold to our bare feet as we waded it in the early dawn, dwindled to a brook, and at last ebbed away along the beach, a tiny stream of fresh water. These perennial streams are the secret of the fertile coast all the way from Wady Hom to Birka."

The whole country through which we passed, as well as the region north of Muscat, is capable of development if only there was a good government and intertribal warfare could be prevented. The Batna coast is the exception to all the maritime plains that surround so large a part of the Arabian Peninsula. In western and eastern Arabia these

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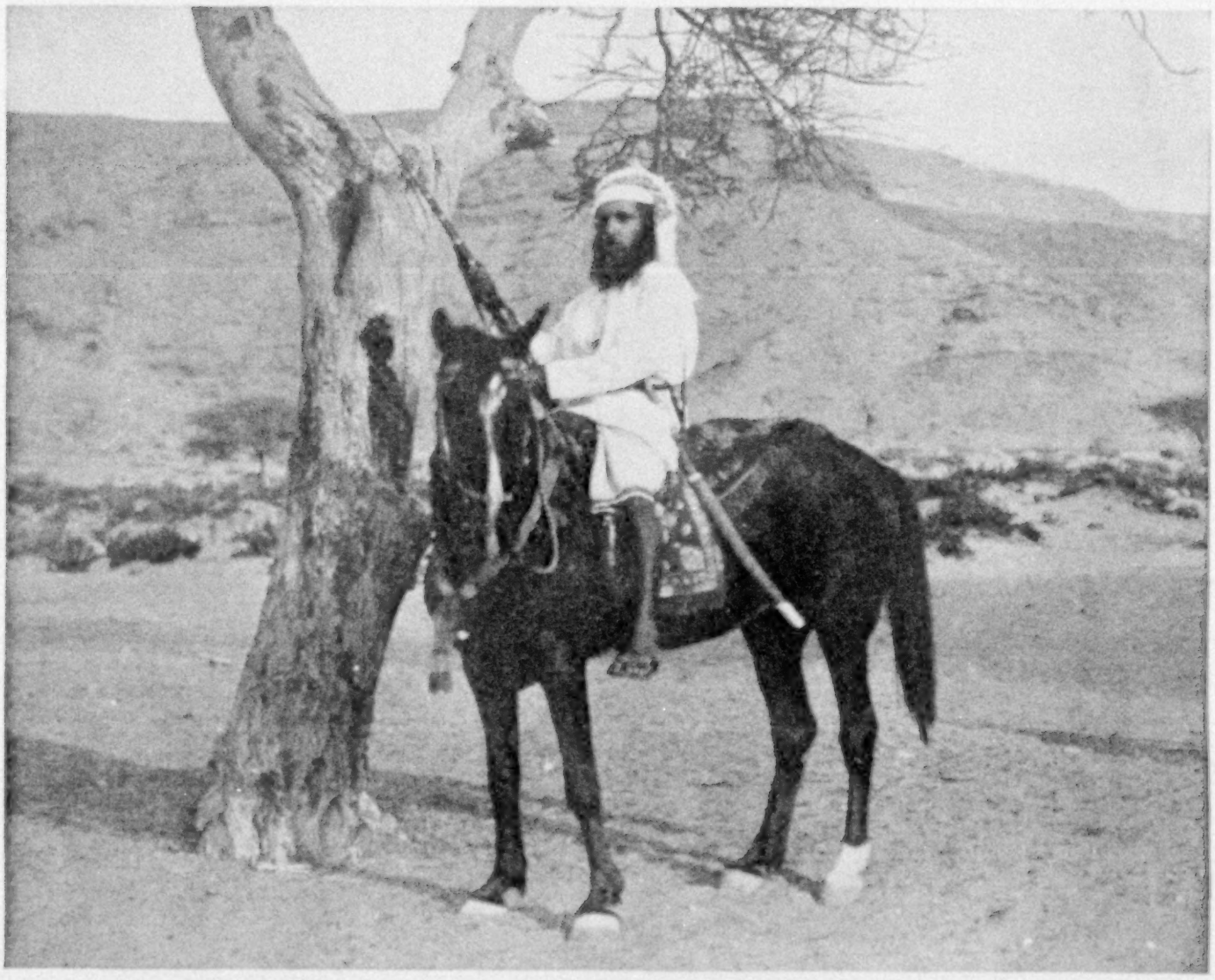


SON OF THE SULTAN OF OMAN ON A FULL-BLOOD ARAB HORSE UNDER A NUBUK TREE

sandy plains are nearly all barren, but from Muscat for 150 miles north date plantations and gardens extend almost to the ocean beach. Fresh water comes down from the high mountain ranges of Jebel Akhdar, and the Omanese Arabs are most successful in their primitive methods of irrigation.

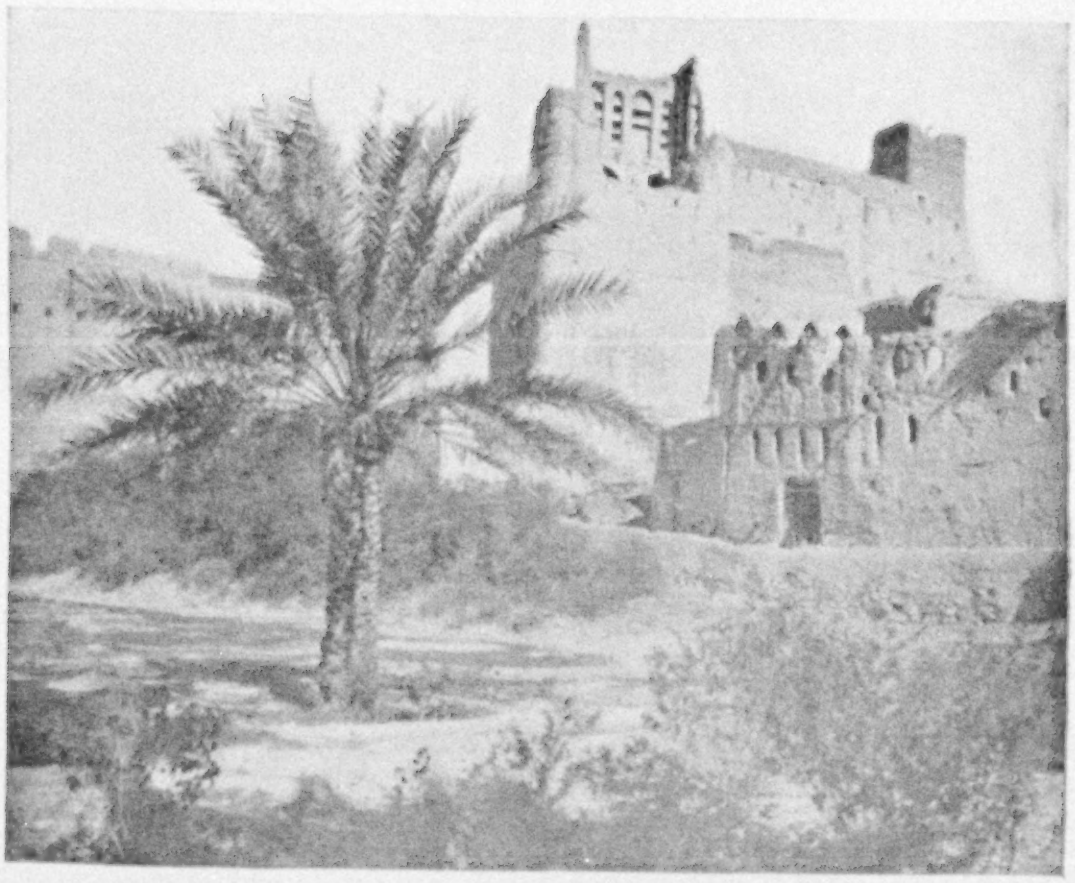
The chief authorities on the interior of Oman were until recent date Niebuhr, Wellsted (1835), Whitelock (1838), Eloy (1843), and Palgrave (1863). Palgrave, however, only visited the coast, and his account of the interior and its history is pure romance. Later travelers, especially Colonel Miles (whose recent articles on Oman in the *Geographical Journal* are very valuable), my brother, Peter J. Zwemer, and Dr. James Cantine have visited the chief cities of Jebel Akhdar and corroborated the accuracy of Lieutenant Wellsted in his "Travels in Arabia."

Although Colonel Miles reached the edge of the Oman Desert, all the country beyond is still largely *terra incognita*. No one has ever made the journey beyond the range of mountains or solved the mystery of western Oman, which is still a blank on the best maps; nor do we know anything of the land 100 miles southwest of Muscat save by Arab hearsay.

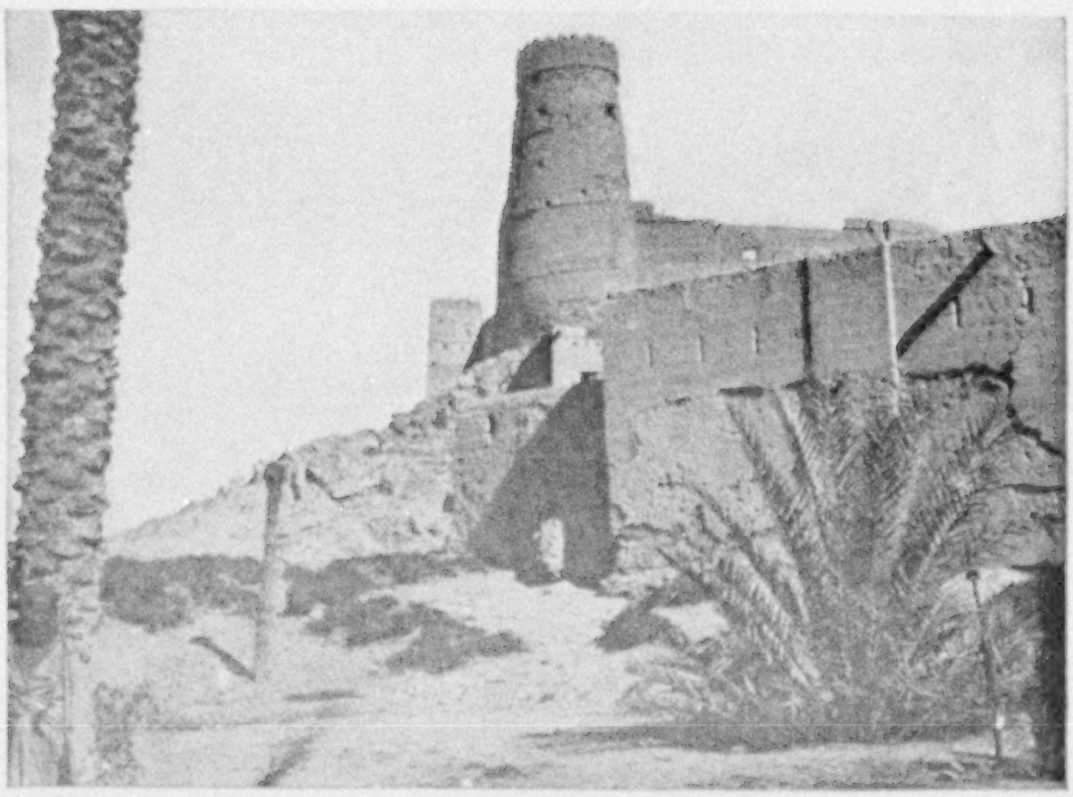
The most populous and fertile district of the highlands of Oman is Jebel Akhdar, which is also the best known. The fertility of this region is wonderful and in striking contrast with the barren rocks of so large a part of the coast. With a semi-tropical climate, an elevation of

NATIVE WOMEN OF OMAN

The heavy silver anklets, ear-rings, bracelets, and nose jewels are typical, as is also the peculiar veil worn over the face

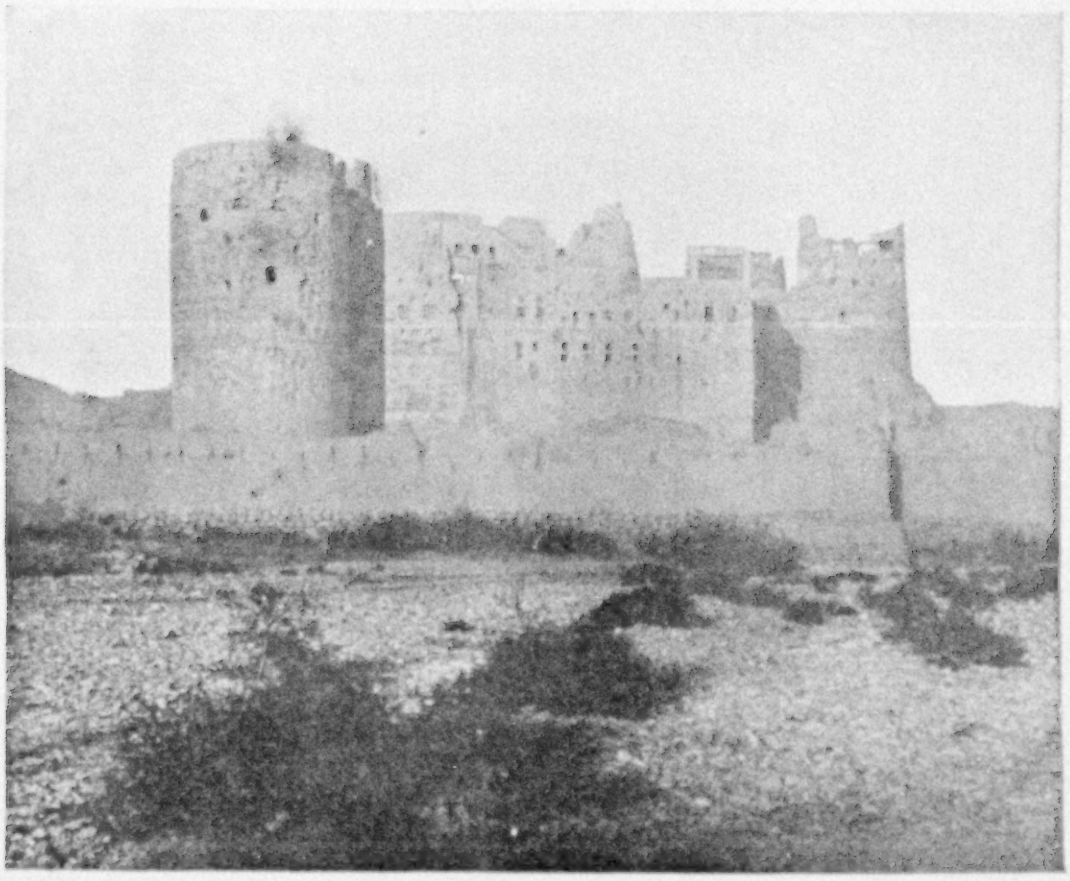


PART OF THE FORT AT BAHILA, IN OMAN



THE WIND TOWER ON THE FORT AT BAHILA

The town of Bahila during the fourteenth and fifteenth centuries was the capital of Oman. Its castle is a large, substantial, and handsome edifice, says Col. S. B. Miles, who visited the town some years ago. The castle is ornamented with two towers, one of which, probably the loftiest structure in Oman, is called the Wind Tower and has apartments in it for use in the hot season, when the open and elevated windows let in the welcome breezes from all quarters. Photos by Lieut. Col. S. B. Miles. From the *Geographical Journal*, London, England.



THE OLD FORT OR CASTLE AT ROSTAK

Photo by Lieut. Col. S. B. Miles. From the *Geographical Journal*, London, England.

3,000 to 5,000 feet, and abundant springs, the wadys and oases of Oman have awakened the delight and amazement of every traveler who has ventured to explore them. Water, the one priceless treasure in all Arabia, here issues in perennial streams from many rocky clefts, and is most carefully husbanded by the ingenuity of the people for wide irrigation by means of canals or watercourses called *faluj*.

Wellsted thus describes these underground aqueducts: "They are, as far as I know, peculiar to this country, and are made at an expense of labor and skill more Chinese than Arabian. The greater part of the surface of the land being destitute of running streams on the surface, the Arabs have sought in elevated places for springs or fountains beneath it. A channel from this fountain-head is then, with a very slight descent, bored in the direction in which it is to be conveyed, leaving apertures at regular distances to afford light and air to those who are occasionally sent to keep it clean.

In this way the water is frequently conducted for a distance of 6 or 8 miles, and an unlimited supply is thus obtained. These channels are about 4 feet broad and 2 feet deep and contain a clear, rapid stream. Most of the large towns or oases have four or five of these rivulets or *falj* (plural *faluj*) running into them.

The isolated spots to which water is thus conveyed possess a soil so fertile that nearly every grain, fruit, or vegetable common to India, Arabia, or Persia is produced almost spontaneously, and the tales of the oases will be no longer regarded as an exaggeration, since a single step conveys the traveler from the glare and sand of the desert into a fertile tract, watered by a hundred rills, teeming with the most luxurious vegetation."

Some of the photographs that illustrate this article were taken on a recent journey with Dr. Arthur K. Bennett, one of the medical missionaries of the American mission, and give a good idea of the general character of the country

and the people. Except for the Pirate Coast, the Arabs of Oman are remarkably free from fanaticism, simple in their habits, and wonderful in their hospitality. Most of them belong to the Abadhi sect, which has many beliefs in common with Christianity, and the experience of our missionaries has been that the people are not only accessible, but willing to learn, and many of them eager not only for medical help, but for teaching.

PROTECTING OUR FORESTS FROM FIRE*

By Hon. James Wilson, Secretary of Agriculture

DURING the past season there were unusually severe forest fires in nearly every part of the country. The national forests suffered to a greater extent than at any time since their establishment.

The fires of 1910 were primarily due to a severe drought, which extended throughout the country and which in the Northwest was the most severe ever known, so far as official records show. The spring was very dry, and in the summer, when there are usually abundant rains in the mountains, the rainfall was exceedingly small and very localized. The region most affected was the area drained by the Columbia River, ex-

* From Secretary Wilson's Report for 1910.

A FAVORABLE CONDITION FOR BURNING PILED BRUSH

A MOUNTAIN TRAIL BUILT FOR FIRE PATROL

The first object of the trail is to open up a forest and make it accessible for patrol and for fighting fires. The trails in the national forests are permanently constructed and are designed for saddle and pack horse travel. While their first purpose is to facilitate patrol and access to a fire, they may be used as starting points for back firing, and will often check or actually stop a small surface fire. Photo from Henry S. Graves, Chief U. S. Forest Service.

tending from the ocean to western Wyoming and Montana.

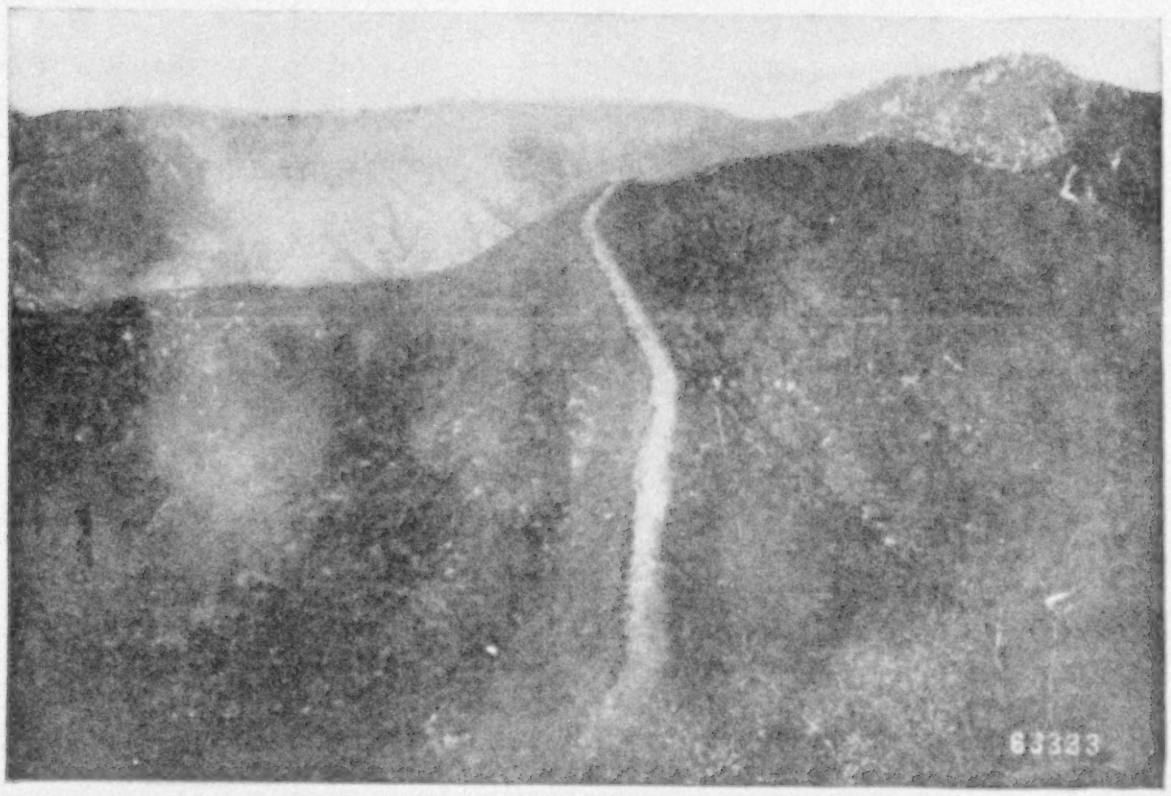
The effect of the drought was to render the forests very inflammable. Not only did the surface litter of leaves, branches, fallen logs, and other material become very dry, but the thick layer of vegetable mold in the deep, usually moist forests became like tinder.

In addition to the drought, the past season was characterized in many places by constant high winds, which rendered fire protection exceptionally difficult. The smallest escaping spark from a camp-fire or burning slash-pile was often enough to start a blaze, which, under the high winds, developed into a dangerous conflagration in an incredibly short time.

The worst fires occurred in northwestern Montana and Idaho and in eastern Oregon and Washington. Severe fires also occurred in California and the central Rocky Mountain region, but the conditions were not as difficult as in the North Pacific region and the fires were more easily controlled.

The entire forests of the northern Rocky Mountains were at one time threatened with destruction. Unless the fires had been checked, scores of towns and communities would have been wiped out and the lives and homes of thousands of people imperiled. I was confronted with the problem of either putting out the fires or being directly responsible for what would have been one of the worst disasters in the history of the country. Without hesitation I called upon the forest officers to stop the fires and to make such expenditures as seemed absolutely necessary to accomplish this result. Every source of help was called in. Temporary labor was employed where it could be secured. The War Department aided by sending troops. The railroad companies, lumber companies, and private individuals cooperated in the endeavor to avert a great disaster.

Early in September the flames were finally subdued. The fires which could be reached by roads and trails were



A FULLY CLEARED FIRE LINE IN THE SAN GABRIEL MOUNTAINS

The ideal fire line is a completely cleared strip, from which are removed not only the trees and brush, but also all ground débris down to the mineral soil. Such a line is especially necessary wherever fire will run swiftly and it may not be possible to reach the fire promptly with fighting appliances. A conspicuous example of the necessity of such fire lines and of the service rendered by them is found in the chaparral zone of the mountains in southern California, where the chaparral cover is of great importance in protecting the local watersheds. The area is large, the mountains are rough and difficult to travel, and fire runs with great rapidity. The government is therefore building extensive trails for patrol to prevent fires and supplementing them by wide, cleared fire lines to stop any fires that may start. Photo from Henry S. Graves, Chief U. S. Forest Service.

largely put out through the crews working under the forest officers. Those fires in the inaccessible areas were extinguished finally by the aid of timely rain and snow storms. While the aggregate loss of life and property was large and the cost of fighting the fires about a million dollars, I do not hesitate to state that if it had not been for the heroic and efficient work of the forest officers many millions of dollars' worth of public and private property would have been destroyed, and probably many lives would have been lost. I cannot commend too highly the self-sacrificing work of the local forest officers, who toiled day and night, week after week, risking their lives to save the forests.

The reports show that there were over 4,000 fires in the national forests during the season. Most of them were small and were promptly extinguished by the forest officers. Only about 15 per cent of the fires were responsible for the great losses. These occurred chiefly in the inaccessible regions where they could not be reached quickly because of the lack of roads and trails, or in areas inadequately patrolled. The greatest damage was done by the great fire of August 20 in northern Idaho. Many fires were burning at that time, but nearly all of them were under control and would shortly have been extinguished had it not been for a terrific hurricane which developed and swept all fires beyond control. Within 24 hours there was practically a continuous fire for a distance of over 100 miles.

The total area burned over during the

A FIRE LINE IN THE ADIRONDACKS

Where there are no roads or trails which will answer the purpose the Forest Service advocates the construction of special fire lines. These are necessarily expensive and are used only in woodlands in the better-settled portions of the country, where the property to be protected is very valuable.

season amounts to over 3,000,000 acres. While accurate data have not yet been received from all the forests, it is probable that between 6 and 7 billion feet of timber was killed. A portion of this can still be cut and utilized, so that it will not be a total loss. The damage in money cannot be accurately estimated until forest surveys are made, but it will probably reach over $25,000,000 if both merchantable timber and young growth are considered.

The cost of fighting the fires will aggregate a little over a million dollars. This is a large sum, but it represents considerably less than 1 per cent of the value of the property saved.

It is to be deeply regretted that there was a large loss of life through these fires. Altogether 76 persons in the employ of the Forest Service were killed in fighting the fires. That more were not killed was due to the skill and coolness of the forest rangers. Where relatives were found, the bodies were brought out and every help possible given to the families. There were 35 persons killed whose relatives could not be located.

There were a number of men injured more or less seriously. Unfortunately the law does not permit paying the expenses of the injured or their wages after they ceased their work. The hospital expenses of these men were met by private subscription. The Red Cross contributed $1,000. The remaining expenses, including expenses of interment of the dead, were borne by subscriptions from the forest officers and other members of the Forest Service.

HOW THE FOREST FIRES ARE STARTED

Railroads continue to be responsible for a large number of fires. This will continue to be the case until the locomotives are either equipped with efficient spark-arresters or oil is used for fuel. It should be said, however, to the credit of the railroads, that during the past

A PLOWED FURROW THAT STOPPED A SURFACE FIRE

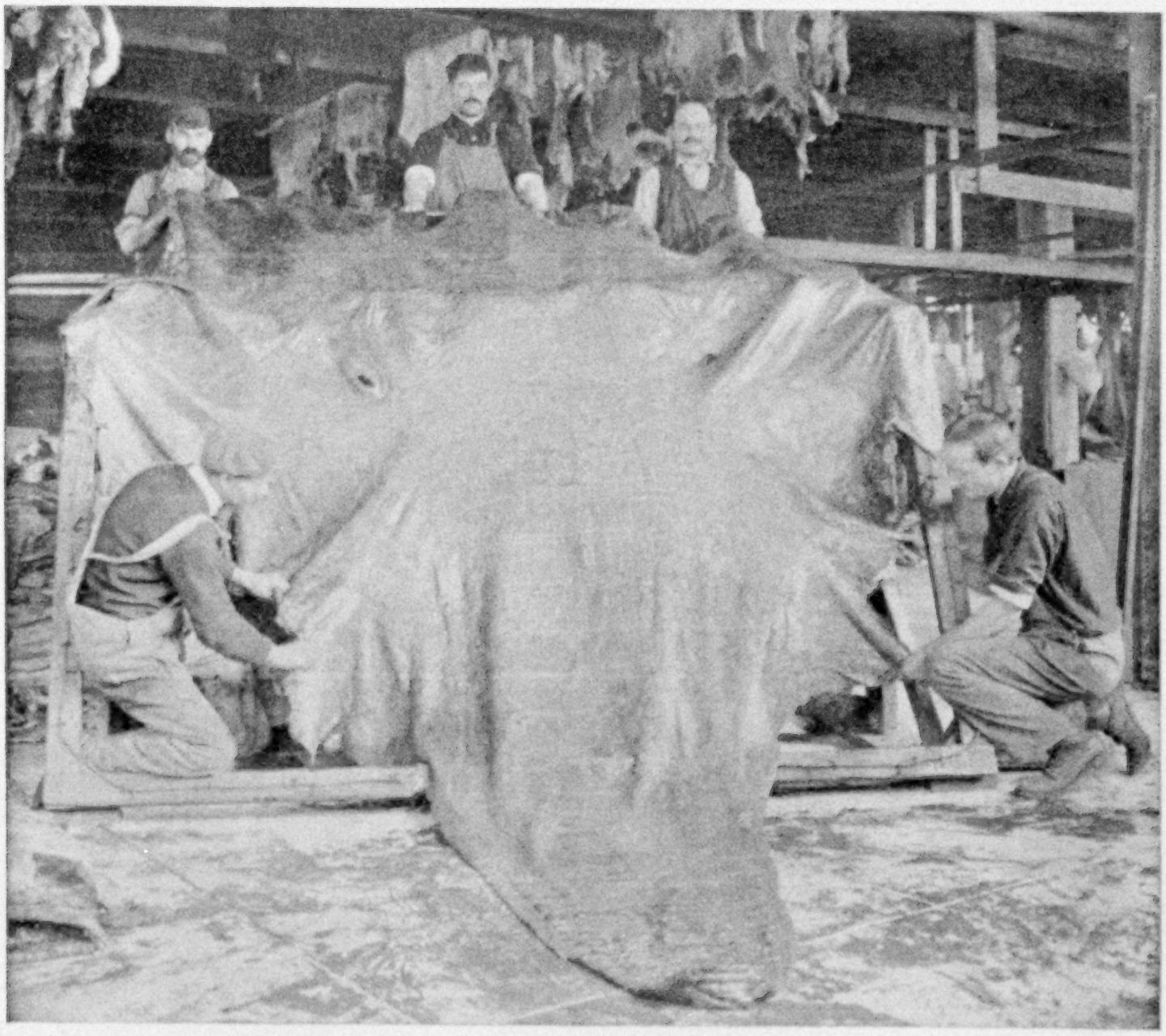
season many of them have taken an active part in assisting in the work of fire protection and fire fighting. The Chicago, Milwaukee and Puget Sound Railroad has installed oil-burning locomotives, and it is a striking fact that not a single fire has started from them, although the road traverses a long distance in the national forests.

A number of railroad companies have entered into coöperative agreements with the Forest Service to clear fire lines along the right of way and to employ special guards to patrol the tracks during the dangerous season. The effectiveness of the coöperative patrol by the railroads and the Forest Service was well illustrated in Montana and Idaho. Although a very large number of fires were started, most of them were extinguished before great damage was done. In some instances, however, no effective system of protection had been undertaken, and very damaging fires are chargeable to locomotive sparks.

One of the most prolific sources of fire and one which is uncontrollable is lightning. There are scattered throughout the forest innumerable dead trees and stubs. During the past season there were many electric storms unaccompanied by rain. In nearly every such storm some tree was struck and a fire started. These occurred frequently in very remote and inaccessible places and resulted in fires which were very disastrous, because they could not be quickly reached.

Many fires are chargeable to carelessness, especially in leaving camp fires and in burning slashings. A larger patrol service would prevent to some extent carelessness in the use of fire in the woods, but fundamentally there is required a better appreciation on the part of the public of the need of protection from fire.

The most regrettable fact is that there has been a considerable amount of incendiarism. While it is very difficult to prove that a given fire is of incendiary origin, circumstantial evidence has shown that many incendiary fires were started during the past season. The situation has been so serious that I have offered a reward for the conviction of incendiaries.

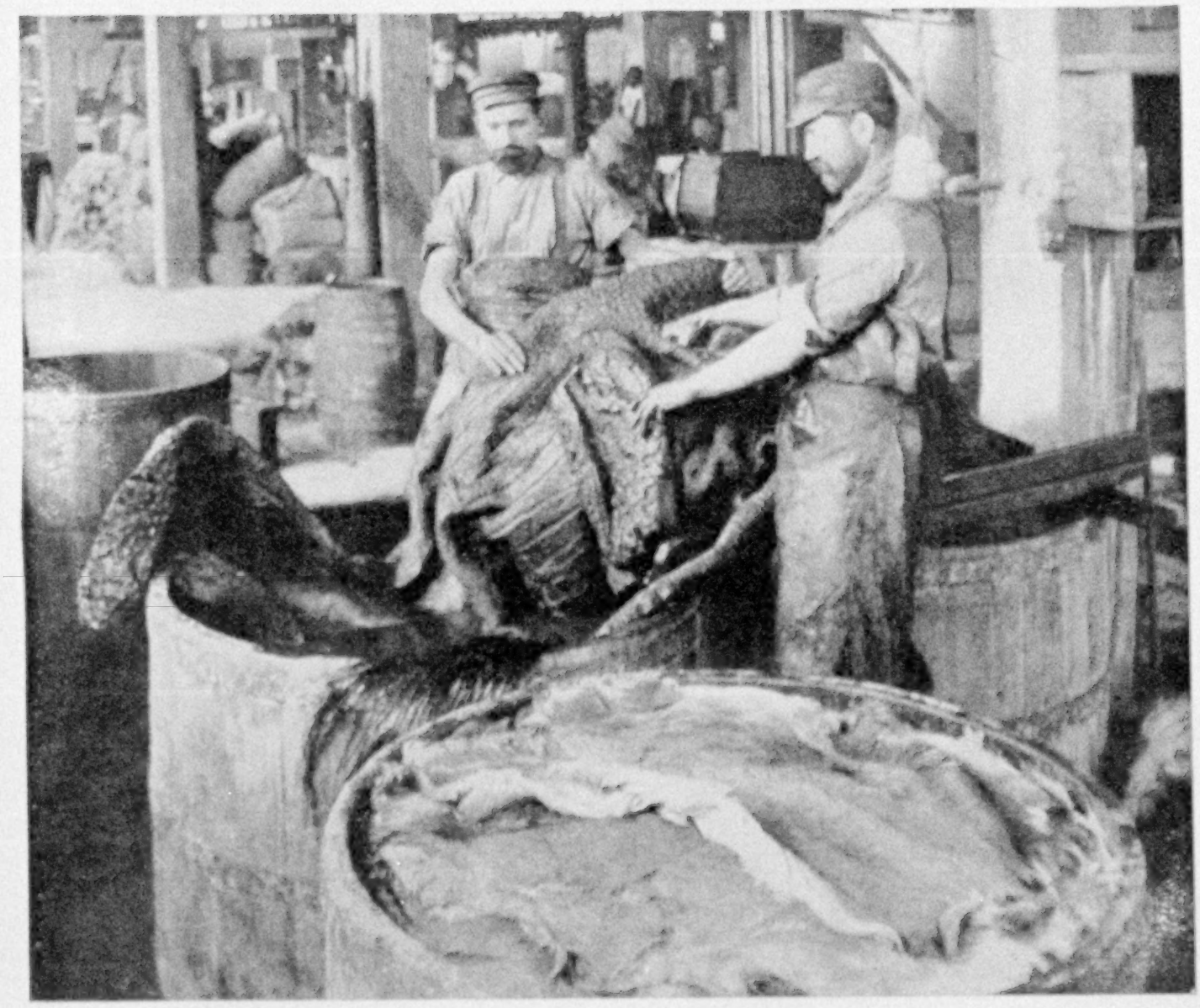


TANNED HIDE OF THE HEAD OF ONE OF THE ELEPHANTS SHOT BY MR. ROOSEVELT FOR THE U. S. NATIONAL MUSEUM

As the scientists could not find a "cask" large enough to contain an elephant's hide, they shipped it in five pieces. This is one of them. Although they scraped off as much from the inside of the skin as they could before shipping, this hide weighed 858 pounds when it arrived. These hides vary in thickness from three-eighths to one inch and are a tough proposition for the tanner. Photo from Crosby Frisian Fur Co., Rochester, N. Y.

OUR FOREST RESERVES NEED MORE TRAILS, FIRE LINES, LOOKOUT STATIONS AND EQUIPMENT

The first necessity in organizing a forest for protection from fire is to construct roads and trails in order that the different parts of the forest may be accessible both for patrol and for the mobilization of fire fighters. A forest in which there are inadequate means of communication cannot be fully protected under any conditions. Without trails it is impossible properly to patrol the forest; and, in case a fire is discovered, it cannot be attacked if there are no means of transporting quickly to it men and fire-fighting equipment. The roads and trails serve also as an aid in attacking fires. The work of constructing roads and trails has been pushed as fast as available funds permitted. There have been so far built about 5,500 miles



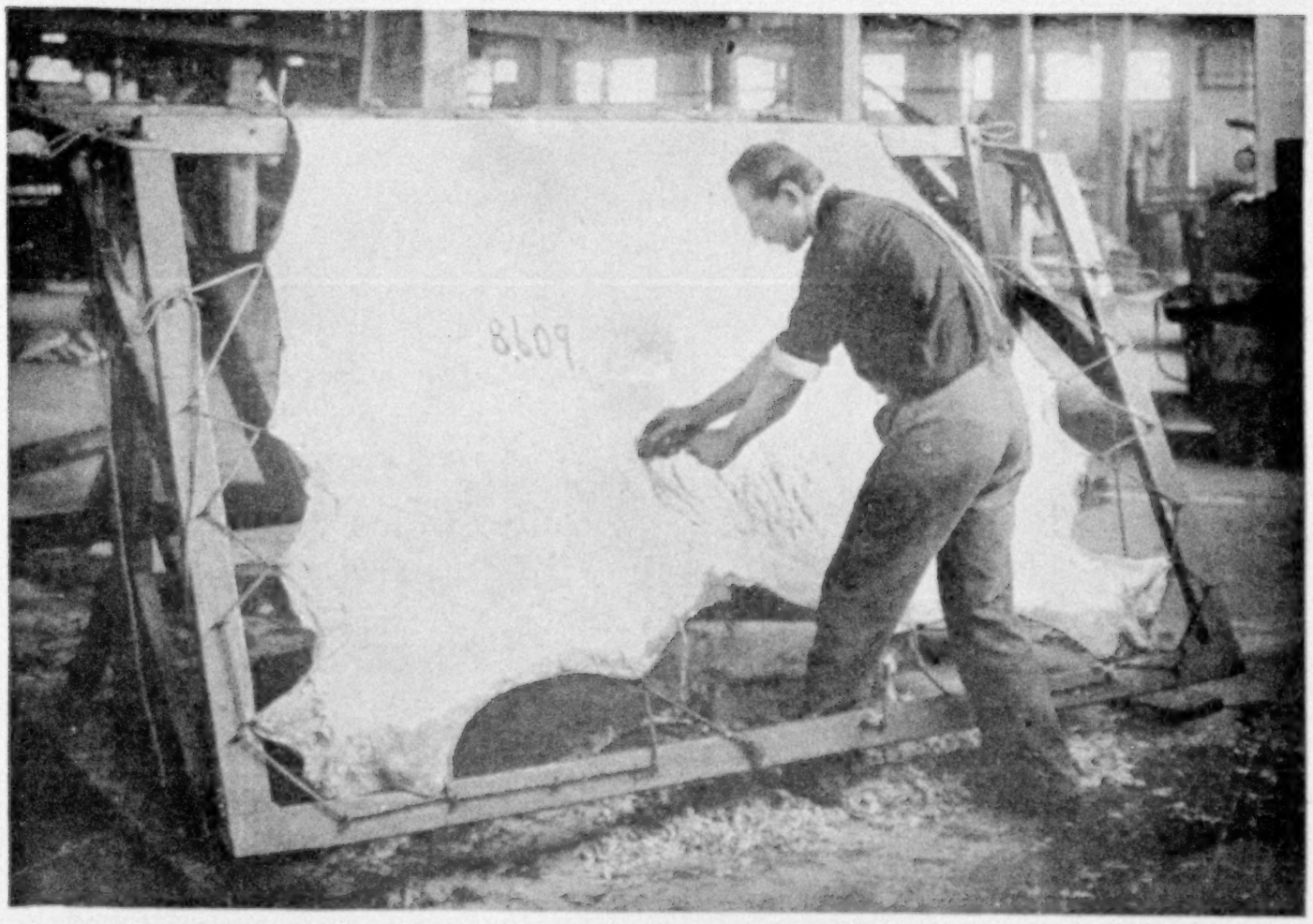
CHANGING THE TAN BATH FOR THE ELEPHANT

Hauling a part of the immense hide from one tan tub to another, in order to change and strengthen the liquor in which it is "tanned." From four to six months are required to properly tan the hide of an elephant, although they are a little more loose in fiber than the hides of the rhinoceros and hippopotamus, which are about the hardest proposition which the tanners have ever been called upon to tackle. One of the workmen has in his hand the elephant's hoof, which is 16 to 18 inches across. Photo from Crosby Frisian Fur Co., Rochester, N. Y.

of roads and 16,000 miles of trails. Yet this is only a beginning when the extent of the forests is taken into consideration.

In addition to roads and trails, it is necessary to construct special fire lines. These are cleared lines through the woods located at critical points to supplement the system of roads and trails for fire protection. They serve both to check fires and also as points from which to fight them. Fire lines are being built as rapidly as possible. The most extensive work has been carried on in southern California, where the protection of the chaparral forests is of great importance in protecting the water supply. Fire lines are also extensively built along railroad rights of way and around lumber operations. The burning of broad fire lines here and there at critical points in open yellow-pine forests has been undertaken and will be pushed with vigor.

A second necessity in the organization



"SKIVING" A PIECE OF ELEPHANT HIDE

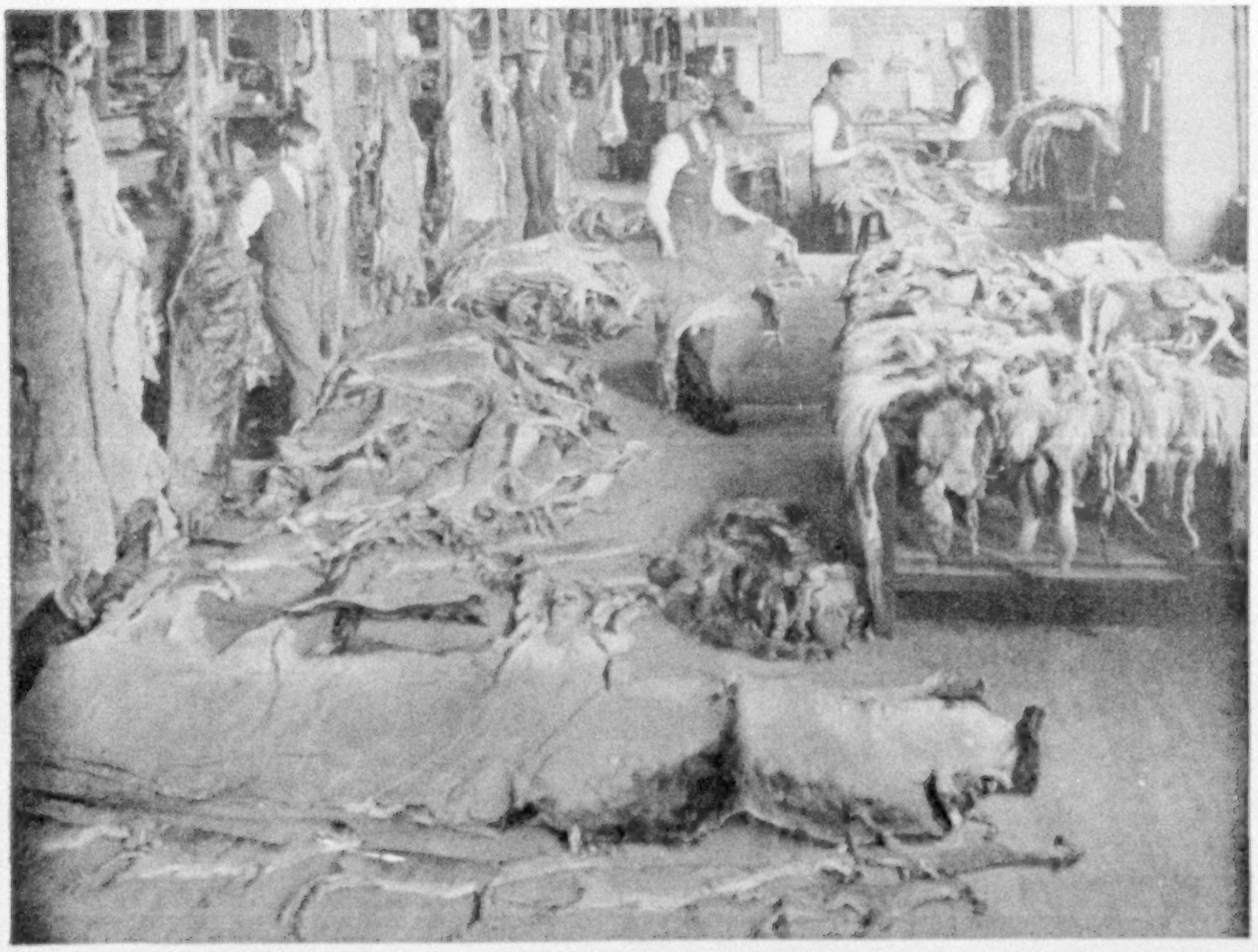
This picture shows the manner of "skiving," or shaving, the inside of a piece of elephant hide. With a sharp knife the extraneous matter and some of the inner thicknesses of the hide are pared away, leaving the skin thinner and much easier to work and mount. A skilled shaver will work hard the better part of a week on a big rhino, hippo, or elephant hide. Photo from Crosby Frisian Fur Co., Rochester, N. Y.

of the forest is a proper equipment for the prevention of fires and for fighting such as may be started. The most essential primary equipment is a system of telephone lines connecting ranger headquarters and lookout stations. The purpose of the telephone is to enable rangers and guards to give quick notice of fires and to secure such assistance as is required. There are already many instances where millions of dollars' worth of Government timber has been saved through the use of such telephone lines as have already been built. The total amount so far constructed comprises about 9,200 miles. The forests are still very meagerly equipped.

The forests should be provided, also, with lookout stations. These are usually located at high points, from which it is possible to look over a large area. At these lookout stations there should be at least a small building and a telephone. Frequently, where it has not been possible to build telephone lines, the lookout stations are provided with the heliograph and other means for signaling. Where the country is flat, watch-towers are built.

An essential part of the equipment of a forest is a system of properly located and well-equipped ranger stations. Many instances have occurred during this season where fires which threatened enormous damage were promptly extinguished because there was a ranger stationed within striking distance.

The equipment of the national forests



SORTING THE ROOSEVELT TROPHIES FOR SHIPMENT

Most of the hides in sight are those of East African antelope, of which 17 varieties are represented. In the foreground is seen the hide of a giant eland, and in front of it are stretched several hides of the tiny "dik-dik," the smallest animal in the world with a split hoof. There are about 200 of the antelope hides. On the table at the right is a pile of many varieties of monkey skins, great and small. There is no African collection in the world in numbers or quality equal to the remarkable series of big and little game which Mr. Roosevelt and the scientific members of his party obtained for the U. S. National Museum. The white rhinos (with the exception of two poor specimens in Berlin and London), the reticulated giraffe, the giant elands, and several of the antelopes are the only specimens of these animals possessed by any museum. The expense of securing this extraordinary series was paid entirely by Mr. Roosevelt and by private individuals, who have thus presented to our National Museum one of the most generous and priceless gifts the American people have received. Photo from Crosby Frisian Fur Co., of Rochester, N. Y.

should comprise also an ample supply of tools necessary in fighting fires. A beginning has been made in the establishment of small equipment stations here and there along the roads and trails, consisting of small buildings or tool-boxes containing axes, shovels, grub-hoes, water-buckets, ropes, etc.

The danger of the recurrence of such disasters as that of last summer's fires should be reduced to a minimum. Though it was unpreventable under the conditions of the year, the day will come when it would be counted preventable, and when under similar conditions it would generally be prevented.

Not to extend the existing permanent improvements as fast as opportunity is given would be criminal. The Forest Service is powerless to provide them except as means are put at its disposal. Expenditures for equipping the forests with roads, trails, telephones lines, fire lines, and other improvements can be made only from the permanent improvement fund. In the years 1907 to 1911 Congress made available a total for this purpose of $1,975,000. The amount available in 1910 was $600,000; in the current year it is $275,000. There are now on file carefully considered plans for specific permanent improvements calling for an amount of work which the entire appropriation for the Forest Service last year would hardly have paid for. In view of the facts, I consider it my duty to ask for a substantial increase of the permanent improvement fund.

Judicious Investment

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Third—It will increase the earning power of your money.

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Where money will earn about 5 to 6 per cent
Where money will earn about 6 to 7 per cent

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There are investors who should seldom go outside of the first section; others might properly have an interest in the first two sections; while still others might select the best that each section has to offer.

This should make it clear to you why a trained mind and knowledge of the subject are essential to judicious investment. Therefore, before determining the section of the field in which your money should be employed, make it a rule to get the advice of a responsible and experienced firm *specializing in the investment business.*

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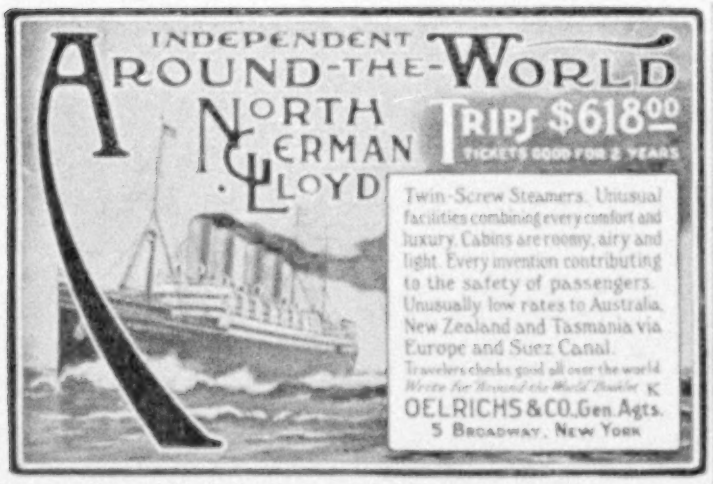
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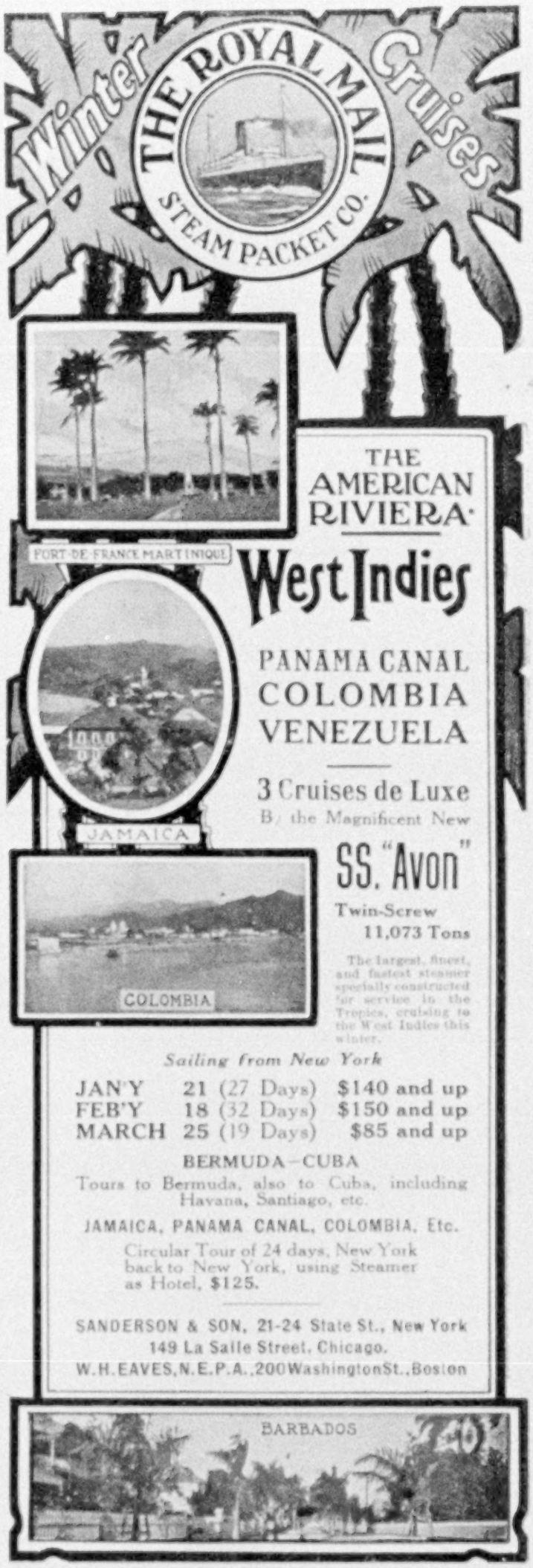
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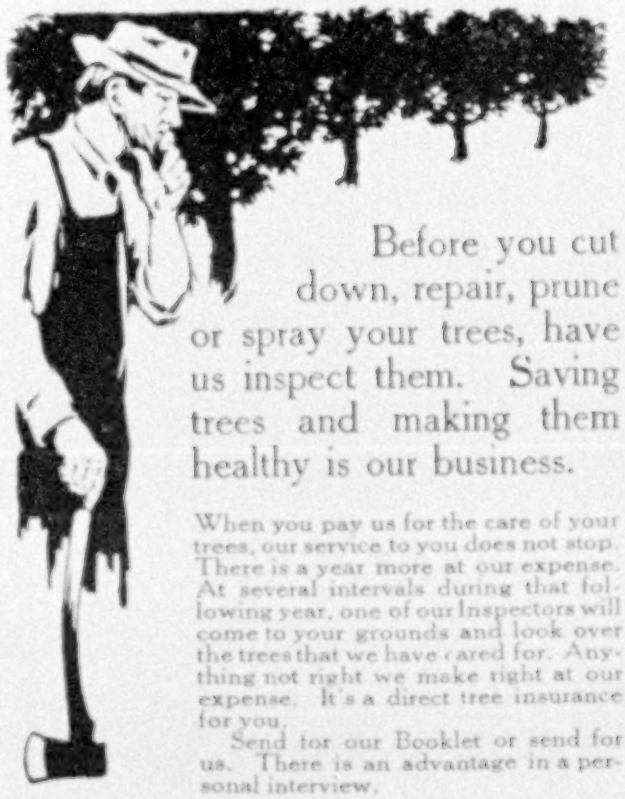

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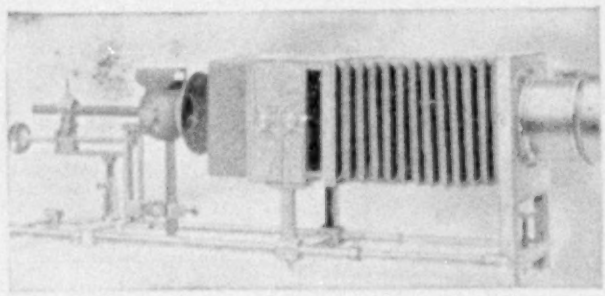

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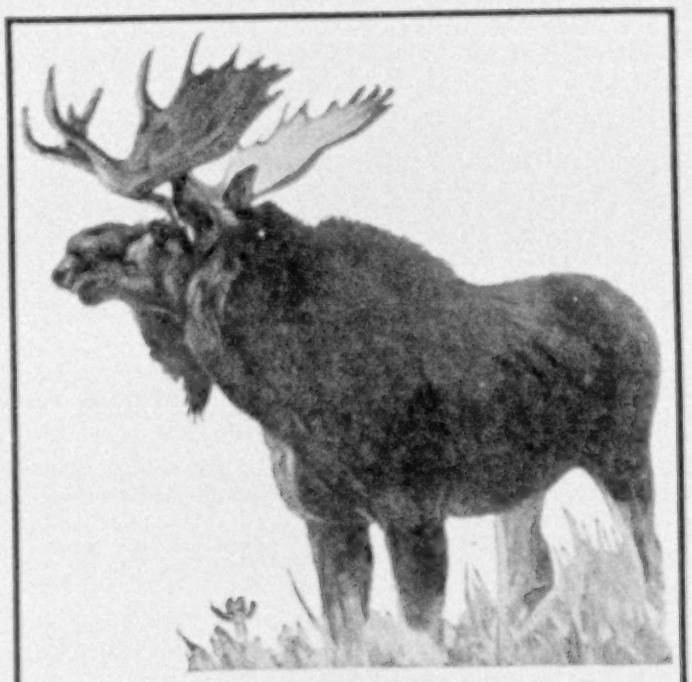

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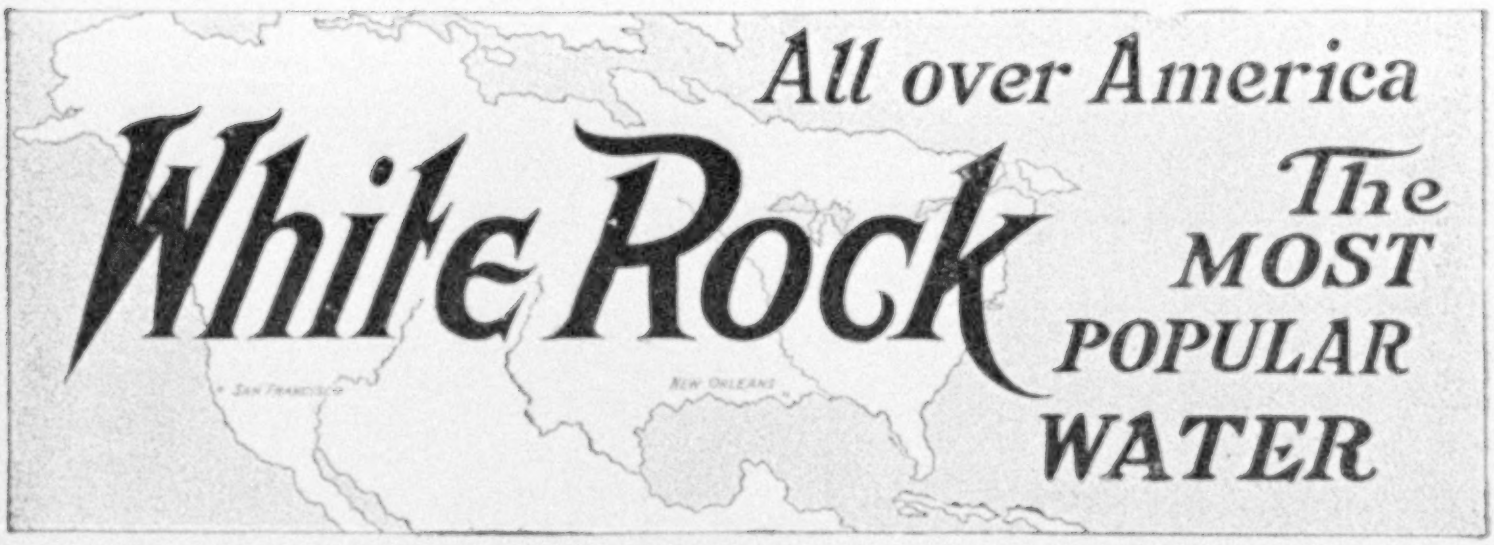

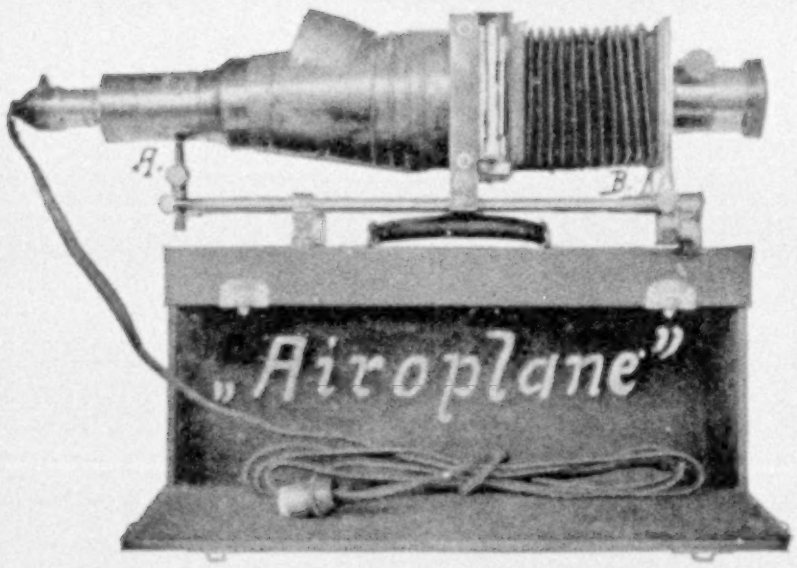

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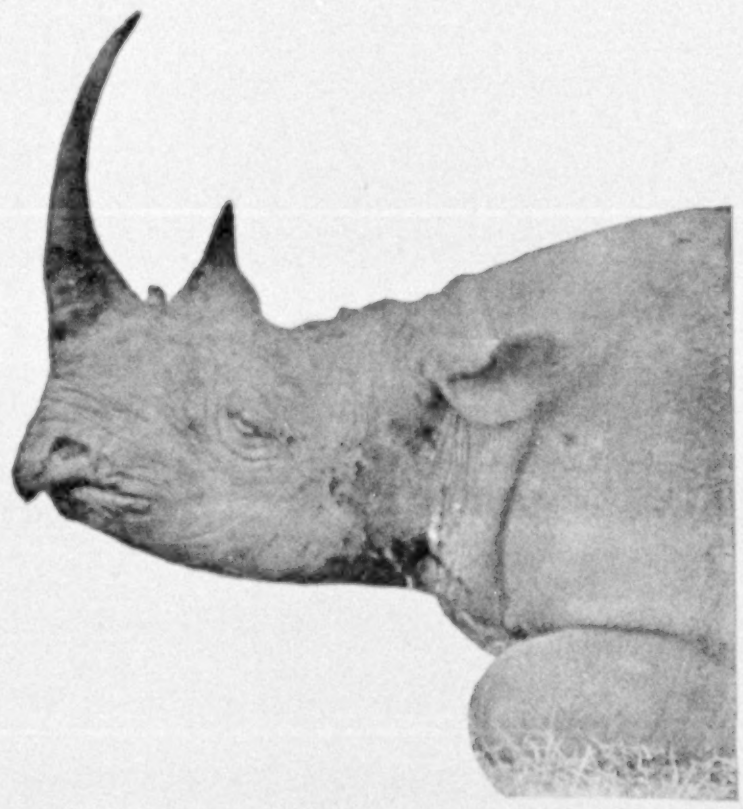

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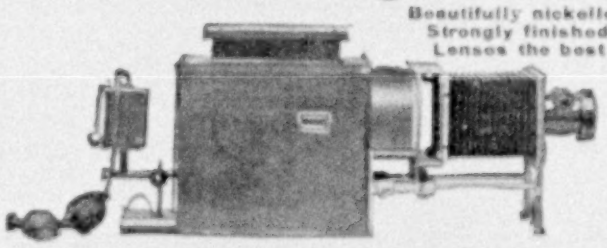

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Contributors: Prof. Otis T. Mason, Smithsonian Institution; Mr. W. W. Skeat, Mr. Archibald Colquhoun; Dr. Theodore Koch Grunberg, Berlin Museum; Miss A. Werner, Mr. W. Crook, etc., etc.

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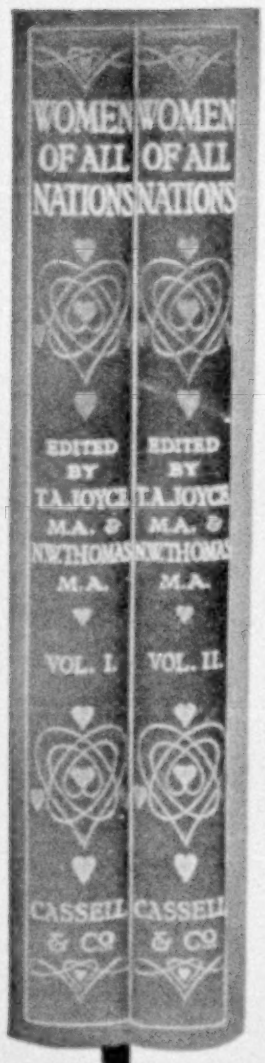
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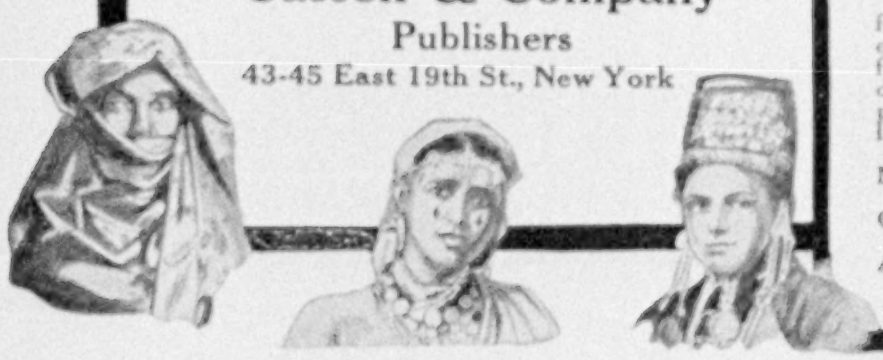

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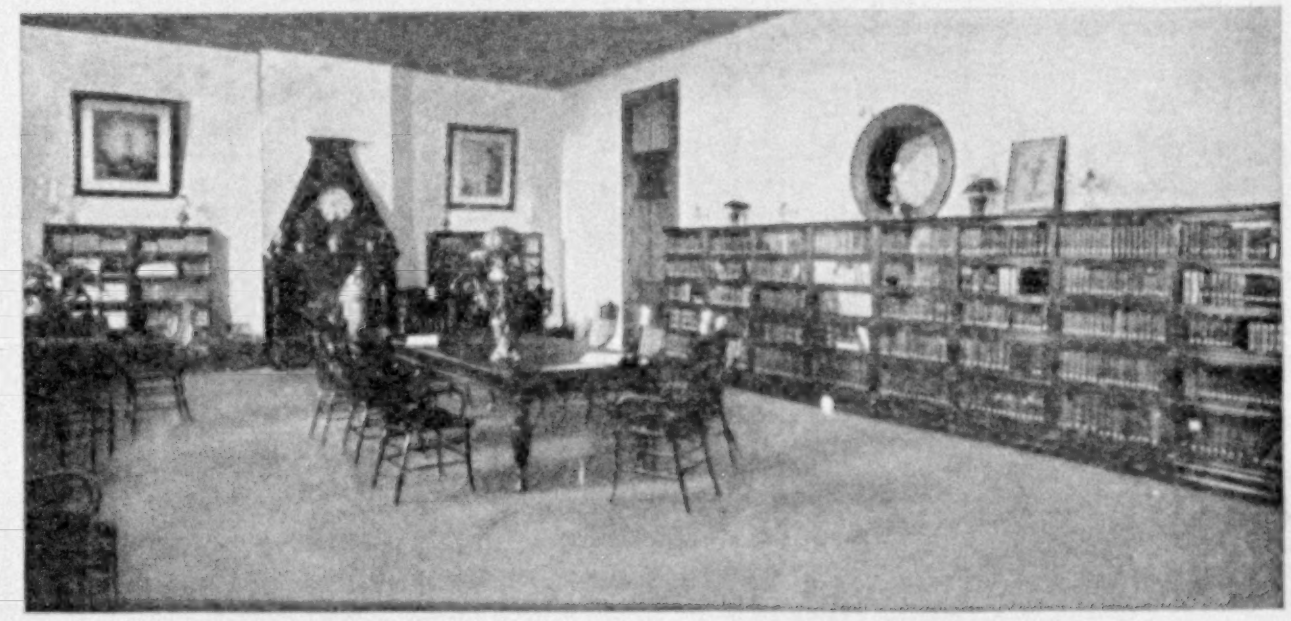

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